

IDC DOCUMENTATION

# Database Schema



## Part 1

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## **Contributors**

Jerry A. Carter, Science Applications International Corporation  
Roger Bowman, Science Applications International Corporation  
Kendra Biegalski, Veridian Systems  
Jane Bohlin, Veridian Systems  
Mark D. Fisk, Mission Research Corporation  
Richard J. Carlson, Mission Research Corporation  
William E. Farrell, Science Applications International Corporation  
Bonnie MacRitchie, Science Applications International Corporation  
Hallie Magyar, Veridian Systems

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## **Ordering Information**

The ordering number for this document is SAIC-01/3052 and TN-2866 through Veridian Systems.

This document is cited within other IDC documents as [IDC5.1.1Rev3].

## Change Page

This document is Revision 3 of the Database Schema. The following changes have been made for this publication:

Page	Change
All	The revision number of the document was changed to 3.
ii	Descriptions of the changes included in this version of the document were updated.
iv	New references were added to the Related Information section.
8	The Fundamental S/H/I table relationships figure was changed. The relationship between <b>stamag</b> and <b>netmag</b> was changed from many-to-one to many-to-zero or many-to-one. The relationship between <b>wftag</b> and <b>wfdisc</b> was changed; the "zero" on the <b>wfdisc</b> side of the relationship was removed.
14	The Waveform table relationships figure was changed. All relationships between <b>wftag</b> and another table were changed to many-to-one or zero-to-one.
16	The Network table relationships figure was changed. The relationship between <b>site</b> and <b>site_address</b> was changed from one-to-one to many-to-one.
19	The Event Screening table relationships figure was changed to reflect new table contents. The figure was also moved from the Fundamental category to the Automatic Processing category.
20	The Analyst Review table relationships figure was changed to include the <b>revaudit</b> table.
22	The Timeseries Spectrums table relationships figure was changed. The relationship between <b>wftag</b> and <b>wfdisc</b> was changed from many-to-one to many-to-one or zero-to-one.
26	The Subscription Subsystem table relationships figure was changed to reflect new table contents.
27	The <b>std_chanmap</b> and <b>exception_chanmap</b> tables were added to the Message and Subscription Subsystems Support Tables figure.
27, 60, 322	The <i>msgtype</i> attribute was added to the <b>datauser</b> table.
73	The <i>cp8</i> , <i>snr7</i> , and <i>noi7</i> attribute definitions in the <b>evsc_hydro</b> table were replaced by <i>cp_broad_band</i> , <i>snr_high_band</i> , and <i>noise_high_band</i> .
73, 195	The <i>arid</i> attribute was removed from the <b>evsc_hydro</b> table.
73, 353	The <i>prodid</i> attribute was removed from the <b>evsc_hydro</b> table.

Page	Change
73, 384	The <i>sta_clear_path</i> attribute was removed from the <b>evsc_hydro</b> table.
73, 384	The <i>sta_score</i> attribute was removed from the <b>evsc_hydro</b> table.
74	The <i>moveout</i> , <i>ndp_snr</i> , <i>magtype_mb</i> , <i>magtype_ms</i> , <i>tect_num</i> , <i>net_pnsmax5</i> , and <i>net_pnsmax7</i> attributes were removed from the <b>evsc_prod</b> table and the <i>moveout_pp</i> , <i>moveout_sp</i> , <i>min_dt_pp</i> , <i>min_dt_sp</i> , <i>ndp_snr_pp</i> , <i>ndp_snr_sp</i> attributes were added to the <b>evsc_prod</b> table. Several of the definitions were also updated.
76	The description for the <b>evscRegional</b> table was updated. The <i>chan</i> , <i>pnsmax</i> , <i>pnsmax_corr</i> , <i>pnsmax_err</i> , <i>pnsn</i> , <i>pnlg</i> , <i>pn_snr</i> , <i>sn_snr</i> , <i>lg_snr</i> , <i>pnsn_qual</i> , and <i>pnlg_qual</i> attributes were added to the table, and the <i>prodid</i> , <i>pnsmax5</i> , <i>pnsmax7</i> , <i>pnsn5</i> , <i>pnsn7</i> , <i>pnlg5</i> , <i>pnlg7</i> , <i>pn5_sn</i> , <i>pn7_sn</i> , <i>sn5_sn</i> , <i>sn7_sn</i> , <i>lg5_sn</i> , <i>lg7_sn</i> , <i>pnsn5_qual</i> , <i>pnsn7_qual</i> , <i>pnlg5_qual</i> , and <i>pnlg7_qual</i> were dropped from the table
80	The <b>exception_chanmap</b> table was added to the S/H/I Table Descriptions chapter.
83	The <b>fs_stageproduct</b> table was added to the schema. It is the same as the <b>fileproduct</b> table.
83, 240	The format of the <i>dsize</i> attribute in the <b>fileproduct</b> table was changed from number(8) to number(10).
83, 255	The format of the <i>foff</i> attribute in the <b>fileproduct</b> table was changed from number(8) to number(10).
87	The format of the <i>msgdformat</i> attribute in the <b>fpdescription</b> table was changed from varchar2(8) to varchar2(16).
121, 323	The format of the <i>msize</i> attribute in the <b>msgdisc</b> table was changed from number(8) to number (10).
122, 253	The format of the <i>filesize</i> attribute in the <b>msgdisc</b> table was changed from number(8) to number (10).
122, 307	The format of the <i>mfoff</i> attribute in the <b>msgdisc</b> table was changed from number(8) to number (10).
122, 252	The format of the <i>fileoff</i> attribute in the <b>msgdisc</b> table was changed from number(8) to number (10).
122, 255	The format of the <i>foff</i> attribute in the <b>msgdisc</b> table was changed from number(8) to number (10).

Page	Change
140	The description for the <b>productypeevsc</b> table was updated. The <i>min_ndp_pp</i> , <i>min_ndp_sp</i> , <i>min_moveout_pp</i> , <i>min_moveout_sp</i> , <i>min_dp_snr_pp</i> , <i>min_dp_snr_sp</i> , <i>magpref_mb</i> , and <i>magpref_ms</i> attributes were added to the table. The <i>min_ndp</i> , <i>min_moveout</i> , <i>min_dp_snr</i> , <i>reg_min_psnr</i> , and <i>reg_min_ssnr</i> were dropped from the table.
153	The <b>revaudit</b> table was added to the schema.
170	The <b>std_chanmap</b> table was added to the S/H/I database tables chapter.
197	The <b>revaudit</b> table was added to the <i>auth</i> attribute description.
208	The <b>evscRegional</b> table was added to the <i>chan</i> attribute description.
220	The <i>cp8</i> attribute description was replaced by <i>cp_broad_band</i> .
251	The <i>ext_chan</i> attribute was added to the S/H/I attributes.
268	The <i>hydro_grp_phase</i> attribute name was corrected to <i>hyd_grp_phase</i> .
275	The <i>int_chan</i> attribute was added to the S/H/I attributes.
283	The <b>exception_chanmap</b> , <b>revaudit</b> , and <b>std_chanmap</b> tables were added to the <i>ldate</i> attribute description.
284	The <i>lg_snr</i> attribute replaced the <i>lg5_sn</i> and <i>lg7_sn</i> attributes.
295	The <i>magpref_mb</i> and <i>magpref_ms</i> attributes were added to the S/H/I Column Descriptions chapter.
296	The <i>magtype_mb</i> and <i>magtype_ms</i> attributes were removed from the S/H/I Column Descriptions chapter.
308	The <i>min_dp_snr_pp</i> and <i>min_dp_snr_sp</i> attributes replaced the <i>min_dp_snr</i> attribute.
308	The <i>min_dt_pp</i> and <i>min_dt_sp</i> attributes were included in the S/H/I Column Descriptions chapter.
309	The <i>min_moveout_pp</i> and <i>min_moveout_sp</i> attributes replaced the <i>min_moveout</i> attribute.
310	The <i>min_ndp_pp</i> and <i>min_ndp_sp</i> attributes replaced the <i>min_ndp</i> attribute.
318	The <i>moveout_pp</i> and <i>moveout_sp</i> attributes replaced the <i>moveout</i> attribute.
329	The <i>ndp_snr_pp</i> and <i>ndp_snr_sp</i> attributes replaced the <i>ndp_snr</i> attribute.
330	The <i>net_pnsmax5</i> and <i>net_pnsmax7</i> attributes were removed from the S/H/I Column Descriptions chapter.

Page	Change
333	The <i>noi7</i> attribute description was replaced by <i>noise_high_band</i> .
337	The <b>exception_chanmap</b> and <b>std_chanmap</b> tables were added to the <i>offdate</i> attribute description.
338	The <b>exception_chanmap</b> and <b>std_chanmap</b> tables were added to the <i>ondate</i> attribute description.
346	The <i>pn_snr</i> attribute replaced the <i>pn5_sn</i> and <i>pn7_sn</i> attributes.
347	The <i>pnlg</i> attribute replaced the <i>pnlg5</i> and <i>pnlg7</i> attributes.
347	The <i>pnlg_qual</i> attribute replaced the <i>pnlg5_qual</i> and <i>pnlg7_qual</i> attributes.
347	The <i>pnsmax</i> attribute replaced the <i>pnsmax5</i> and <i>pnsmax7</i> attributes.
347	The <i>pnsmax_corr</i> and <i>pnsmax_err</i> attributes were added to the S/H/I Column Descriptions chapter.
348	The <i>pnsn</i> attribute replaced the <i>pnsn5</i> and <i>pnsn7</i> attributes.
348	The <i>pnsn_qual</i> attribute replaced the <i>pnsn5_qual</i> and <i>pnsn7_qual</i> attributes.
353	The <b>evscRegional</b> table was dropped from the <i>prodid</i> attribute description.
363	The <i>reg_min_psnr</i> and <i>reg_min_ssnn</i> attributes were dropped from the S/H/I Column Descriptions chapter.
365	The <i>revfunction</i> , <i>revid</i> , <i>revtagid1</i> , <i>revtagname1</i> , <i>revtagid2</i> , <i>revtagname2</i> , and <i>revstate</i> attributes were added to the S/H/I Column Descriptions chapter.
380	The <i>sn_snr</i> attribute replaced the <i>sn5_sn</i> and <i>sn7_sn</i> attributes.
380	The <i>snr7</i> attribute description was replaced by <i>snr_high_band</i> .
384	The <b>exception_chanmap</b> table was added to the <i>sta</i> attribute description.
396	The <i>tectnum</i> attribute was removed from the S/H/I Column Descriptions chapter.
416	The Database Table Groups table was altered to reflect the changes to the radionuclide schema since the last release of the document.
422	The <b>gards_flags</b> table was added to Table 126.
422	The <b>gards_bg_energy_cal</b> table was added to Table 127.
426	Several new synonyms were added to the RMSAUTO account (Table 129).
429	Triggers for the RMSAUTO account were consolidated and updated (Table 130).

Page	Change
435	The <b>gards_dbrole_owner</b> table was added to the RMSMAN unique data constraints (Table 132).
435	The <b>gards_flags</b> table was added to the RMSMAN primary key constraints (Table 133).
436	The <b>gards_bg_energy_cal</b> table was added to the RMSMAN foreign key constraints (Table 134).
438	Several sequences were added to the RMSMAN account (Table 136).
439	Several synonyms were added to the RMSMAN account (Table 137).
444	The <b>gards_soh_char_data</b> , <b>gards_soh_num_data</b> , and <b>gards_soh_sensor_data</b> tables replaced the <b>gards_soh_data</b> table in Figure 27.
449	The <b>gards_sample_cat</b> table replaced the <b>gards_nic</b> table in Figure 32.
452	The <b>gards_sample_xe_procs_params</b> table was updated in Figure 35.
453	The <b>gards_comments_defs</b> table was added to Figure 36 and new attributes were added.
457	The <b>gards_auto_sample_cat</b> table was added to the radionuclide schema.
465	The <b>gards_bg_energy_cal</b> table was added to the radionuclide schema.
466	The <b>gards_cat_template</b> table was added to the radionuclide schema.
469	The <b>gards_comments</b> table was altered; the <i>type</i> attribute was changed to <i>comment_type</i> .
471, 598	The <i>dlid</i> attribute was added to the <b>gards_data_log</b> table.
472	The <b>gards_dbrole_owner</b> table was added to the radionuclide schema.
490	The <b>gards_nic</b> and <b>gards_nic_init</b> tables were removed from the radionuclide schema.
508, 595	The <i>db_name</i> attribute was added to the <b>gards_permissions</b> table.
530, 595	The <i>db_name</i> attribute was added to the <b>gards_roles</b> table.
533	The <b>gards_sample_cat</b> table was added to the radionuclide schema.
546	Several attributes were added to the <b>gards_sample_xe_procs_params</b> table.
547	The <b>gards_soh_char_data</b> table was added to the radionuclide schema.
548	Several attributes were added to the <b>gards_soh_code</b> table.
548	The <b>gards_soh_data</b> table was removed from the radionuclide schema.

Page	Change
550	The <b>gards_soh_num_data</b> table was added to the radionuclide schema.
551	The <b>gards_soh_sensor_data</b> table was added to the radionuclide schema.
561, 639	The <i>sample_id</i> attribute was added to the <b>gards_user_comments</b> table.
563, 595	The <i>default_role</i> attribute was moved from the <b>gards_users</b> table to the <b>gards_users_roles</b> table.
567	Several attributes were added to the <b>gards_xe_proc_params_template</b> table.
570	The <i>abscissa</i> attribute was added to the radionuclide schema.
573	The <b>gards_auto_sample_cat</b> and <b>gards_sample_cat</b> tables were added to the <i>activity</i> attribute.
574	The <b>gards_cat_template</b> table was added to the <i>alpha</i> attribute.
582	The <b>gards_cat_template</b> table was added to the <i>begin_date</i> attribute.
583	The <i>beta_coeff1</i> , <i>beta_coeff2</i> , and <i>beta_coeff3</i> attributes were added to the radionuclide schema.
583	The <i>beta_ecr_order</i> attribute was added to the radionuclide schema.
586	The <b>gards_auto_sample_cat</b> and <b>gards_sample_cat</b> tables were added to the <i>category</i> attribute.
586	The <b>gards_cat_template</b> , <b>gards_sample_cat</b> , and <b>gards_auto_sample_cat</b> tables were added to the <i>central_value</i> attribute.
591	The <b>gards_cat_template</b> table was added to the <i>comment_text</i> attribute.
591	The <b>gards_comments</b> table was added to the <i>comment_type</i> attribute and the format was changed to number.
592	The <b>gards_sample_xe_proc_params</b> and <b>gards_xe_proc_params_template</b> tables were added to the <i>compton</i> attribute.
592	The <i>constant</i> attribute was removed from the radionuclide schema.
596	The <i>delta</i> attribute was added to the radionuclide schema.
597	The <i>det_back_used</i> attribute was added to the radionuclide schema.
598	The <b>gards_cat_template</b> , <b>gards_soh_char_data</b> , <b>gards_soh_num_data</b> , and <b>gards_soh_sensor_data</b> tables were added to the <i>detector_id</i> attribute.
598	The <i>display_detector</i> and <i>display_station</i> attributes were added to the radionuclide schema.

Page	Change
600	The <b>gards_soh_char_data</b> , <b>gards_soh_num_data</b> , and <b>gards_soh_sensor_data</b> tables replaced the <b>gards_soh_data</b> table in the <i>dtg_begin</i> attribute.
600	The <b>gards_soh_char_data</b> , <b>gards_soh_num_data</b> , and <b>gards_soh_sensor_data</b> tables replaced the <b>gards_soh_data</b> table in the <i>dtg_end</i> attribute.
603	The <b>gards_cat_template</b> table was added to the <i>end_date</i> attribute.
611	The <b>gards_cat_template</b> table was added to the <i>gamma</i> attribute.
611, 612	The <i>gamma_coeff1</i> , <i>gamma_coeff2</i> , and <i>gamma_coeff3</i> attributes were added to the radionuclide schema.
612	The <i>gamma_ecr_order</i> and <i>gas_back_used</i> attributes were added to the radionuclide schema.
614	The <b>gards_auto_sample_cat</b> and <b>gards_sample_cat</b> tables were added to the <i>hold</i> attribute.
615	The <i>init_begin_date</i> and <i>init_end_date</i> attributes were added to the radionuclide schema.
617	The <b>gards_sample_xe_proc_params</b> and <b>gards_xe_proc_params_template</b> tables were added to the <i>lc_abscissa</i> attribute.
618	The <i>lower_bound</i> attribute was added to the radionuclide schema.
621	The <i>method_id</i> and <i>method_type</i> attributes were added to the radionuclide schema.
624	The <b>gards_cat_template</b> , <b>gards_sample_cat</b> , and <b>gards_auto_sample_cat</b> tables were added to the <i>name</i> attribute.
627	The <i>num_samples</i> attribute was added to the radionuclide schema.
628	The <i>owner</i> attribute was added to the radionuclide schema.
628	The <b>gards_soh_char_data</b> and <b>gards_soh_num_data</b> tables replaced the <b>gards_soh_data</b> table in the <i>param_code</i> attribute.
629	The <i>param_display</i> and <i>param_display_flag</i> attributes were added to the radionuclide schema.
639	The <b>gards_auto_sample_cat</b> , <b>gards_sample_cat</b> , and <b>gards_bg_energy_cal</b> tables were added to the <i>sample_id</i> attribute.
640	The <i>sensor_name</i> and <i>sensor_type</i> attributes were added to the radionuclide schema.
643	The <b>gards_cat_template</b> , <b>gards_soh_char_data</b> , <b>gards_soh_num_data</b> , and <b>gards_soh_sensor_data</b> tables were added to the <i>station_id</i> attribute.

Page	Change
646	The <b>gards_cat_template</b> table was added to the <i>tstat</i> attribute.
646	The <i>type</i> attribute for <b>gards_comments</b> was deleted from the radionuclide schema.
647	The <i>unit</i> attribute was added to the radionuclide schema.
647	The <i>upper_bound</i> attribute was added to the radionuclide schema.
649	The <b>gards_soh_char_data</b> , <b>gards_soh_num_data</b> , and <b>gards_soh_sensor_data</b> tables replaced the <b>gards_soh_data</b> table in the <i>value</i> attribute.
651	The <b>gards_cat_template</b> table was added to the <i>xform</i> attribute.
R1	Several new references were added to the document.

# Database Schema

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# Database Schema

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## About this Document

This chapter describes the organization and content of the document and includes the following topics:

- Purpose
- Scope
- Audience
- Related Information
- Using this Document

# About this Document

## PURPOSE

This document describes the Prototype International Data Centre (PIDC) database schema. It is Revision 3 of *Database Schema*.

Since the Revision 2 publication, four new tables have been added and seven tables have been modified in the seismic, hydroacoustic, infrasonic (S/H/I) schema. Descriptions of all tables, columns, and entity relationships have been added, changed, or deleted to reflect the following changes:

- The **msgtype** attribute was added to the **datauser** table.
- Tables used by the Event Screening Subsystem (**evsc\_hydro**, **evsc\_prod**, **evsc\_regional**, and **producttypeevsc**) were altered to meet the needs of software updates.
- The **fs\_stageproduct** table was added to the schema to retain the results of running the *FSstage* process between runs. This table has the same structure as the **fileproduct** table.
- Storage formats for several of the **fileproduct** and **msgdisc** table attributes were changed.
- The **revaudit** table was added to the schema to keep a history of the revisions made to an event.
- The **std\_chanmap** and **exception\_chanmap** tables were added to the schema to map external channel names to channel names used within the PIDC.

Since the Revision 2 publication, eight new tables have been added, nine tables have been modified, and three tables have been deleted from the radionuclide schema. Descriptions of all tables, columns, and entity relationships have been added, changed, or deleted to reflect the following changes:

- Three new tables were added to the schema to support categorization: **gards\_auto\_sample\_cat**, **gards\_cat\_template**, and **gards\_sample\_cat**.
- Three new tables (**gards\_soh\_char\_data**, **gards\_soh\_num\_data**, and **gards\_soh\_sensor\_data**) replaced the **gards\_soh\_data** table and the **gards\_soh\_code** table was altered to support the processing of State of Health (SOH) data.
- The **gards\_db\_role\_owner** table was added and the **gards\_permissions**, **gards\_roles**, **gards\_users**, and **gards\_users\_roles** tables were altered. These tables manage roles and permissions.
- The **gards\_comments**, **gards\_data\_log**, **gards\_sample\_xe\_proc\_params**, and **gards\_user\_comments** tables were altered.
- The **gards\_bg\_energy\_cal** table was added to the schema.
- The **gards\_nic** and **gards\_nic\_init** tables were removed from the schema.

## SCOPE

This document describes the schema used in the PIDC databases. The schema includes relationships between tables, table descriptions, and definitions of the table columns.

This document does not describe the specific location and general use of these tables at the PIDC or how to manipulate them to obtain information. Nor does it provide the formats for external file representations of the tables. These topics are described in sources cited in Related Information.

## AUDIENCE

This document is intended for software developers, engineers, scientists, processing operators, and anyone who needs to interact with the databases at the PIDC.

▼ About this Document

## RELATED INFORMATION

This document supersedes [And90a], [Swa91], [Swa93], [Car97], [IDC5.1.1], [IDC5.1.1Rev1], and [IDC5.1.1Rev2].

External formats of all columns used with S/H/I data are described in “S/H/I Column Descriptions” on page 185, and most can also be found in [Car97].

Tables used with specific application software are described in the software design documents (for example, [IDC7.1.1], [IDC7.1.3], [IDC7.1.4], [IDC7.1.5], [IDC7.1.6], [IDC7.1.10Rev1], [IDC7.1.11], [IDC7.1.12], [IDC7.3.1], [IDC7.4.1], [IDC7.4.2], [IDC7.4.3], [IDC7.4.4], and [IDC7.5.1]).

The following documents provide information and instructions for retrieving data from the PIDC databases:

- *Database Tutorial* [IDC5.1.2]
- *Configuration of PIDC Databases* [IDC5.1.3Rev0.1]

See “References” on page R1 for a listing of all the sources of information consulted in preparing this document.

## USING THIS DOCUMENT

This document is part of the overall documentation architecture for the International Data Centre (IDC). It is part of the User Guides document category, which provides information relevant to understanding IDC processing.

This document is organized as follows:

- Chapter 1: S/H/I Entity Relationships

This chapter describes the relationships between the S/H/I database tables.

- Chapter 2: S/H/I Table Descriptions

This chapter describes each table in the S/H/I database schema (in alphabetical order). It includes information about the category to which the table belongs, the columns included in the table, ORACLE storage types for each column, keys (primary, alternate, and foreign), and column categories (descriptive, measurement, or administrative).

- Chapter 3: S/H/I Column Descriptions

This chapter provides detailed descriptions of the columns of the S/H/I database schema including the tables in which the columns may be found, a full description of the column, storage and external formats, NA values, units, and ranges.

- Chapter 4: Radionuclide Database Overview

This chapter provides an overview of the radionuclide database tables through an organizational description of the tables.

- Chapter 5: Radionuclide Entity Relationships

This chapter describes the relationships between the radionuclide database tables.

- Chapter 6: Radionuclide Table Descriptions

This chapter describes each table in the radionuclide database schema (in alphabetical order). It includes information about the columns included in the table, ORACLE storage types for each column, and keys (primary, alternate, and foreign).

- Chapter 7: Radionuclide Column Descriptions

This chapter provides detailed descriptions of the columns of the radionuclide database schema including the tables in which the columns may be found, a full description of the column, storage and external formats, NA values, units, and ranges.

- References

This section lists the sources cited in this document.

**▼ About this Document****■ Glossary**

This section defines the terms, abbreviations, and acronyms used in this document.

**■ Index**

This section lists topics and features provided in this document along with page numbers for reference.

The print version of this document is separated into three parts for ease of printing. Each part contains one or more chapters of the document. Part 1 includes Chapters 1 and 2; Part 2 includes Chapter 3; and Part 3 includes Chapters 4 through 7. Each part has a complete Table of Contents, an “About this Document” section, a Reference, a Glossary, and an Index. Parts 1 and 3 also have a List of Figures and a List of Tables.

**Conventions**

This document uses a variety of conventions, which are described in the following tables. Table I shows the conventions for entity-relationship diagrams. Table II lists typographical conventions. Table III explains certain technical terms that are not part of the standard Glossary, which is located at the end of this document.

**TABLE I: ENTITY-RELATIONSHIP SYMBOLS**

Description	Symbol
One A maps to one B.	A ←————→ B
One A maps to zero or one B.	A ←————○————→ B

TABLE I: ENTITY-RELATIONSHIP SYMBOLS (CONTINUED)

Description	Symbol						
One A maps to many Bs.	A 						
One A maps to zero or many Bs.	A 						
database table	<table border="1" data-bbox="1199 616 1411 861"> <tr><td>tablename</td></tr> <tr><td> primary key  foreign key</td></tr> <tr><td>attribute 1</td></tr> <tr><td>attribute 2</td></tr> <tr><td>...</td></tr> <tr><td>attribute n</td></tr> </table>	tablename	 primary key  foreign key	attribute 1	attribute 2	...	attribute n
tablename							
 primary key  foreign key							
attribute 1							
attribute 2							
...							
attribute n							

TABLE II: TYPOGRAPHICAL CONVENTIONS

Element	Font	Example
database table	<b>bold</b>	<b>dataready</b>
database table and column, when written in the dot nota- tion		<b>prodtrack.status</b>
database columns	<i>italics</i>	<i>status</i>
processes, software units, and libraries		<i>ParseSubs</i>
user-defined arguments and variables used in parameter (par) files or program com- mand lines		<i>delete-remarks object</i>
titles of documents		<i>Continuous Data Subsystem</i>
BEA supplied server software (all CAPS)		<i>BRIDGE</i>
computer code and output filenames, directories, and web sites	<code>courier</code>	<code>&gt;(list 'a 'b 'c)</code> <code>ars.scm</code>
text that should be typed in exactly as shown		<code>edit-filter-dialog</code>

## ▼ About this Document

**TABLE III: TECHNICAL TERMS**

Term	Description
Data: Administrative	database columns used for administrative purposes
Data: Descriptive	database columns that are qualitative
Data: Measurement	database columns that are quantitative
field	database column
Keys: Alternate	set of alternate database columns that uniquely define a row in a database table (unique key)
Keys: Foreign	primary key in a different table
Keys: Primary	set of database columns that uniquely define a row in a database table (unique key)

**Dates and Times**

The *time* column used throughout the S/H/I schema is stored as epochal time, the number of seconds since January 1, 1970. Epochal time has a precision of one millisecond. Often *time* is matched by the more readable field, *jdate*. This “Julian date” represents a day in the form *yyyyddd*; for example, 1981231 where 1981 is the year (*yyyy*) and 231 is the day of year (*ddd*).

**Oracle Data Types**

The PIDC database uses four of the available ORACLE data types:

- `varchar2(n)`

All character data in the database are defined to be `varchar2(n)` where *n* is the maximum number of characters in the string. `varchar2` does not store trailing blanks.

- number(*n*)

All integer fields in the database are defined to be number(*n*) where *n* is the maximum number of digits allowed in the field. Number may also be used without specifying the maximum number of digits.

- float(*n*)

ORACLE supports the float(*n*) data type where *n* is the maximum number of binary digits. Float allows the approximation of single and double precision floats commonly used in scientific programming. The decimal point may be specified anywhere from the first to the last digit (or not at all). All real numbers in the database are single precision float(24), except for epoch time fields such as *time*, *endtime*, and other time fields that are double precision float(53).

- date

The only columns in the database that are declared to be the ORACLE date data type are the *Iddate*, *moddate*, *last\_mig\_date*, *offdate*, *ondate*, and *initialdate* columns, which store the day and time a record was inserted into the database or last modified.



# Chapter 1: S/H/I Entity Relationships

This chapter describes the relationships between selected tables for the PIDC database schema. The following topics are covered:

- Overview
- Fundamental Tables
- Reference Tables
- S/H/I Application Software Tables

# Chapter 1: S/H/I Entity Relationships

## OVERVIEW

This chapter contains entity-relationship diagrams that show the relationships among database tables for the IDC database schema. The diagrams include the table names, and, in most cases, the keys as well as the names of all of the columns. The table name is always shown at the top of the table symbol. Keys (if present) are shown below the table name. The primary key of a table is indicated with a black key symbol. An optional foreign key is indicated with a white key symbol. Keys consisting of multiple columns are shown with a key symbol next to the first column of the key, and the remaining columns are listed beneath with no symbol. All column names (if present) are shown below the key section in the diagrams. Some of the key columns in the schema have been denormalized for convenience and usability. For readability, relationships for denormalized keys are not shown. Furthermore, the primary key, *commid*, of the table **remark** is not explicitly drawn in the tables in which it appears as a foreign key.

## Column Relationships

Relationships between tables are usually indicated by naming the column or columns through which two tables are related. Table 1 explains the syntax used. In many cases the column names that must be compared in the two tables are not identical, or a column value in one table must be compared to more than one column value in another table. The delimiters in the syntax are the dash (-) and the slash (/). A dash (-) separates groups of column names from the two tables, and slashes (/) separate the columns that comprise the composite key. Other symbols,

such as equal (=), vertical bar (|), ampersand (&), and brackets, specify how the columns are compared. Expressions within brackets in relationships between tables are evaluated first. The order of operations is: =, |, and &.

**TABLE 1: SYNTAX USED TO INDICATE DATABASE TABLE RELATIONSHIPS**

Syntax	Definition
<i>col</i>	This is the simplest case where the column names ( <i>col</i> ) of the keys in the tables at each end of the relationship are the same. Both keys consist of a single column.
<i>col1/col2</i>	A slash (/) is used when a key is comprised of multiple columns. Here, the keys in both tables are the same and consist of two columns, <i>col1</i> and <i>col2</i> .
<i>col1-col2</i>	A dash (-) is used when the column names of the keys in the two tables are not the same. <i>Col1</i> is the name of the key column in one table. <i>Col2</i> is the name of the key column in the other table. Each key consists of a single column. Only one dash may be used, and the dash separates the keys of the two tables. A dash can be combined with slash (/) to show that the keys consist of multiple columns and that one or more of the columns have different names in the two tables as in <i>col1/col2-col3/col4</i> (both parts of the key are different in the two tables), or <i>col1/col2-col1/col3</i> (only the second part of the key is different in the two tables).
<i>col1-col2/col3=value</i>	An equals sign (=) is used when a component of a key must be set to a particular value. Here <i>col1</i> is the name of the key column in one table. <i>Col2</i> and <i>col3</i> are the names of the key columns in the other table, and <i>col3</i> must be set to the shown value. See the <i>arid-tagid/tagname=arid</i> relationship between <b>arrival</b> and <b>wftag</b> and <i>orid-tagid/tagname=orid</i> relationship between <b>origin</b> and <b>wftag</b> .
<i>col1-col2   col3</i>	A vertical line ( ) is used to show that the key in a table could be one of a set of columns. This is different from a key that consists of multiple columns. Here <i>col1</i> corresponds to either <i>col2</i> or <i>col3</i> . See the <i>magid-mbid msid mlid</i> relationship between <b>netmag</b> and <b>origin</b> .

## ▼ S/H/I Entity Relationships

**TABLE 1: SYNTAX USED TO INDICATE DATABASE TABLE RELATIONSHIPS (CONTINUED)**

Syntax	Definition
<i>col1-col2 &amp; col3</i>	An ampersand (&) is used to show that a key in one table must have a value between the values of two keys in another table. Here the value of <i>col1</i> must be between the values of <i>col2</i> and <i>col3</i> . See the <i>sta(chan/time)-sta(chan/time&amp;endtime</i> relationship between <b>wfdisc</b> and <b>sensor</b> .
<i>(col1)-(col2)</i>	Brackets () are used to show that the keys within them have different formats and a conversion must be made to make the comparison. Here <i>col1</i> corresponds to <i>col2</i> , but <i>col1</i> and <i>col2</i> have different storage formats (usually an epoch time versus a date). See the <i>sta(chan/(time)-sta(chan/(ondate&amp;offdate)</i> relationship between <b>sitechan</b> and <b>siteaux</b> .

The relationship shown in Figure 1, with **table\_1** columns on the left and **table\_2** columns on the right, demonstrates the possible relationships between the columns of two different tables. The syntax of Table 1 is used to interpret the relationships between the columns of **table\_1** and **table\_2** in Figure 1. *Col8* in **table\_2** has no matching column in **table\_1** and must be equal to **value** in this relationship. All other columns have one or more corresponding columns in the other table. Following the syntax, *col1* in **table\_1** must have the same value as *col1* in **table\_2**, *col2* in **table\_1** must have a value between *col4* and *col5* in **table\_2**, and *col3* in **table\_1** must match either *col6* or *col7* in **table\_2** for the one-to-many relationship indicated by the entity-relationship symbol (Table I on page vi) to be true.

**FIGURE 1. SAMPLE ENTITY RELATIONSHIP**

Some of the entity-relationship diagrams show more than one relationship between two tables. For example, there are two relationships between the **origin** and **event** tables in Figure 2: a many-to-zero or many-to-one relationship through **evid** and a zero-to-one or one-to-one relationship through **prefor-orid**. The **evid** relationship states that for every **origin** entry, there is zero or one corresponding entry in **event** where the **evid** in **origin** equals the **evid** in **event**, and for every **event** entry, there are many **origin** entries where the **evid** in **event** equals the **evid** in **origin**. The **prefor-orid** relationship states that for every **origin** entry, there is zero or one corresponding entry in **event** where the **orid** in **origin** equals the **prefor** in **event**, and for every **event** entry, there is one **origin** entry where the **prefor** in **event** equals the **orid** in **origin**.

### **Table Categories**

The database tables of the schema are grouped into natural categories. The first category contains the fundamental tables used with S/H/I data. These tables are used by many applications and are frequently updated. The fundamental tables contain a smaller set called the core tables. The core tables, which have remained

**▼ S/H/I Entity Relationships**

essentially unchanged for many years, have been widely adopted by other seismological organizations, and therefore their definitions are virtually immutable. The relationships between the fundamental tables are shown in Figures 2 through 7.

Figures 8, 9, and 10 show the relationships of tables in the second category, referential tables for S/H/I data. These tables are read by many applications, but seldom if ever are the contents altered. Most of the data in these tables pertain to International Monitoring System (IMS) stations and seismic networks.

Relationships between tables used by only a few application programs are shown in 11 additional figures. These are further grouped according to the software configuration items of the software architecture. Figures 11 and 12 have tables associated with automatic processing; Figures 13, 14, and 15 have tables associated with interactive processing; and Figure 16 has tables associated with management of distributed processes. Figures 17 through 21 are related to the data services software; Figures 22 and 23 are used by system monitoring software; Figure 24 shows tables that facilitate use of the database; and finally, Figure 25 shows tables that contain information about historical explosions.

**FUNDAMENTAL TABLES**

The fundamental tables have been part of seismic processing at the PIDC from its inception. They hold data characterizing time-series signals as well as the collections of signals that are associated with a particular origin or event.

Figure 2 summarizes the fundamental tables. In this figure, only the table names and keys are shown. Those tables that are part of the core set are labeled 3.0 core and 3.1 core, indicating previous versions of the schema [And90a], [Swa91], [Swa93]. Figure 3 shows the tables that have data related to signal arrivals and the association of arrivals to origins and events. Additional data about signal arrivals are recorded in the tables shown in Figure 4, and Figure 5 shows tables holding data about source size.

Tables holding data used for event characterization are shown in Figure 6. Finally, Figure 7 shows the relationships of tables that have information about the time-series data, which are themselves saved in conventional files.

## Summary of Tables and Keys

Fundamental tables related to stored time series, detected signals, and relationships between signals and events are shown in Figure 2. This summary provides the table names, keys, and relationships, but each table is presented in its entirety in a subsequent figure.

Data from the IMS stations (`wfdisc`) are processed for detections (`detection`) from which arrivals and signal characteristics are extracted (`amplitude`, `arrival`, `stassoc`). The signals are used to infer event locations (`assoc`, `event`, `netmag`, `origerr`, `origin`, `originref`, `parrival`, `stamag`).

## ▼ S/H/I Entity Relationships

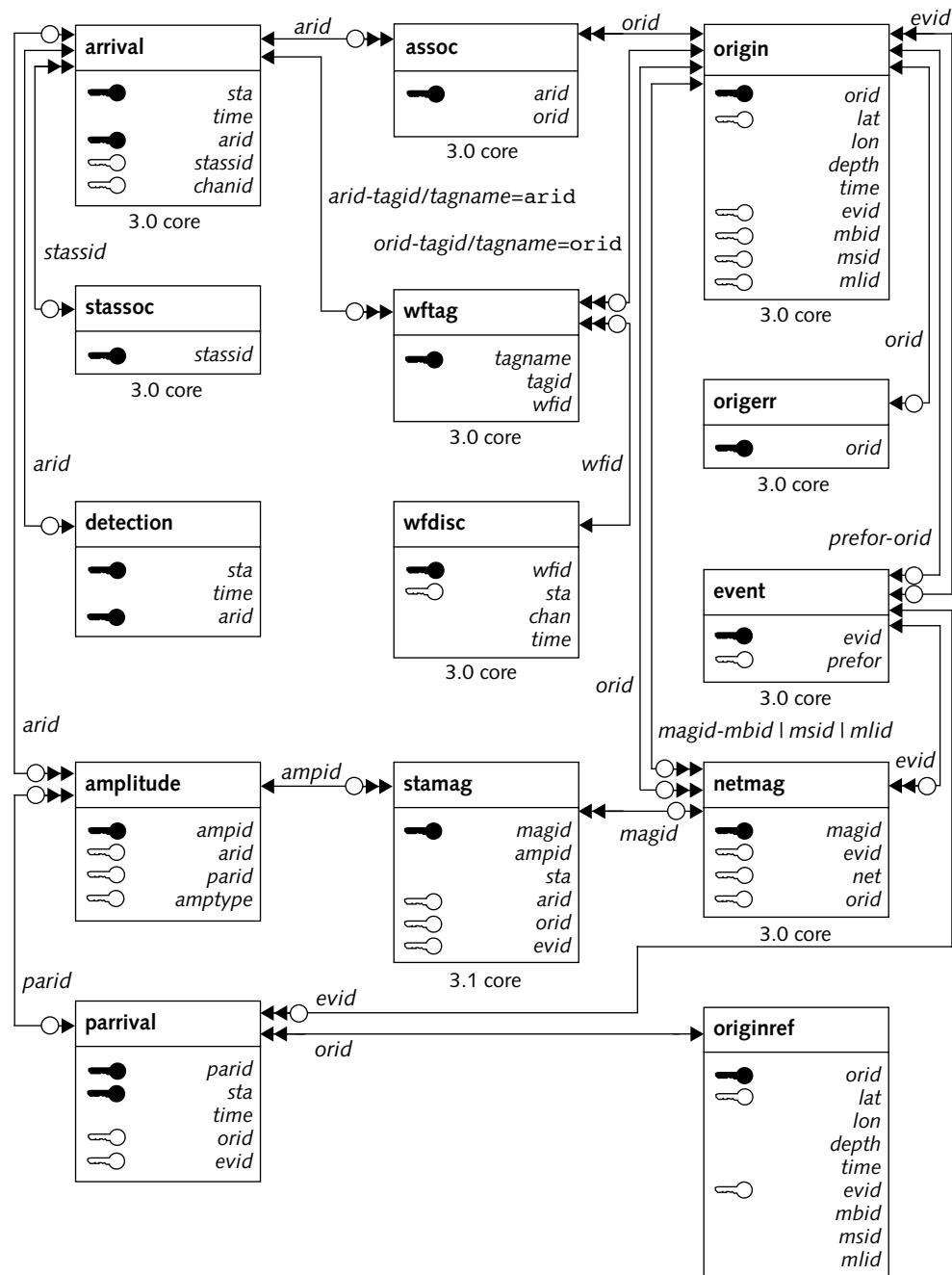


FIGURE 2. RELATIONSHIPS BETWEEN FUNDAMENTAL S/H/I TABLES

## Event

Figure 3 shows tables involved in forming origin hypotheses and events. Each table is part of the core set. Tables with information about event arrivals, location, origin time, and error are included. During automated processing, groups of arrivals from several stations are associated with presumed events. The initial origin estimate for an individual station is contained in the **stassoc** table, which is related to the **arrival** table through **stassid**. Specific arrivals listed in the **arrival** table are associated with origins in the **origin** table through the **assoc** table. An event may have several different origins, each of which is a different estimate. The preferred origin is indicated in the **event** table.

## Measurements

The tables shown in Figures 4, 5, and 6 contain additional data about seismic and hydroacoustic signals and the magnitudes, locations, and characteristics of events. Most tables in this category lie outside the core set and are used by a smaller number of applications.

Figure 4 shows tables that have detailed data about arrivals. Figure 5 shows tables related to the location, origin time, and size of an event.

The event characterization tables in Figure 6 include **spvar**, **complexity**, **splp**, **third-mom**, **timefreq**, and **ceppks**. The **spvar** table contains arrival-based information and is related to the **arrival** table through **arid**. The other tables contain origin-based measurements and are related to **origin** through **orid**.

## ▼ S/H/I Entity Relationships

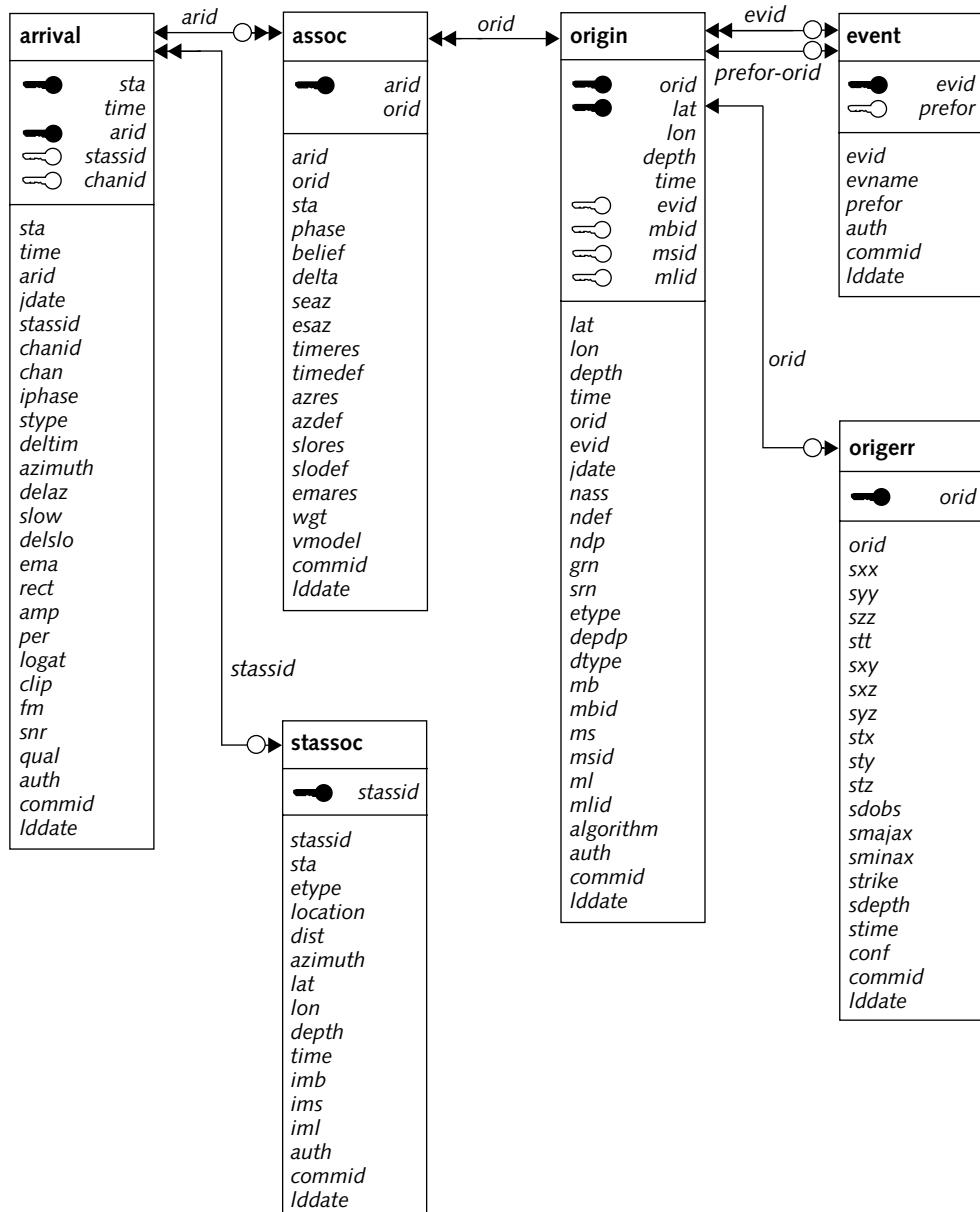


FIGURE 3. EVENT TABLE RELATIONSHIPS

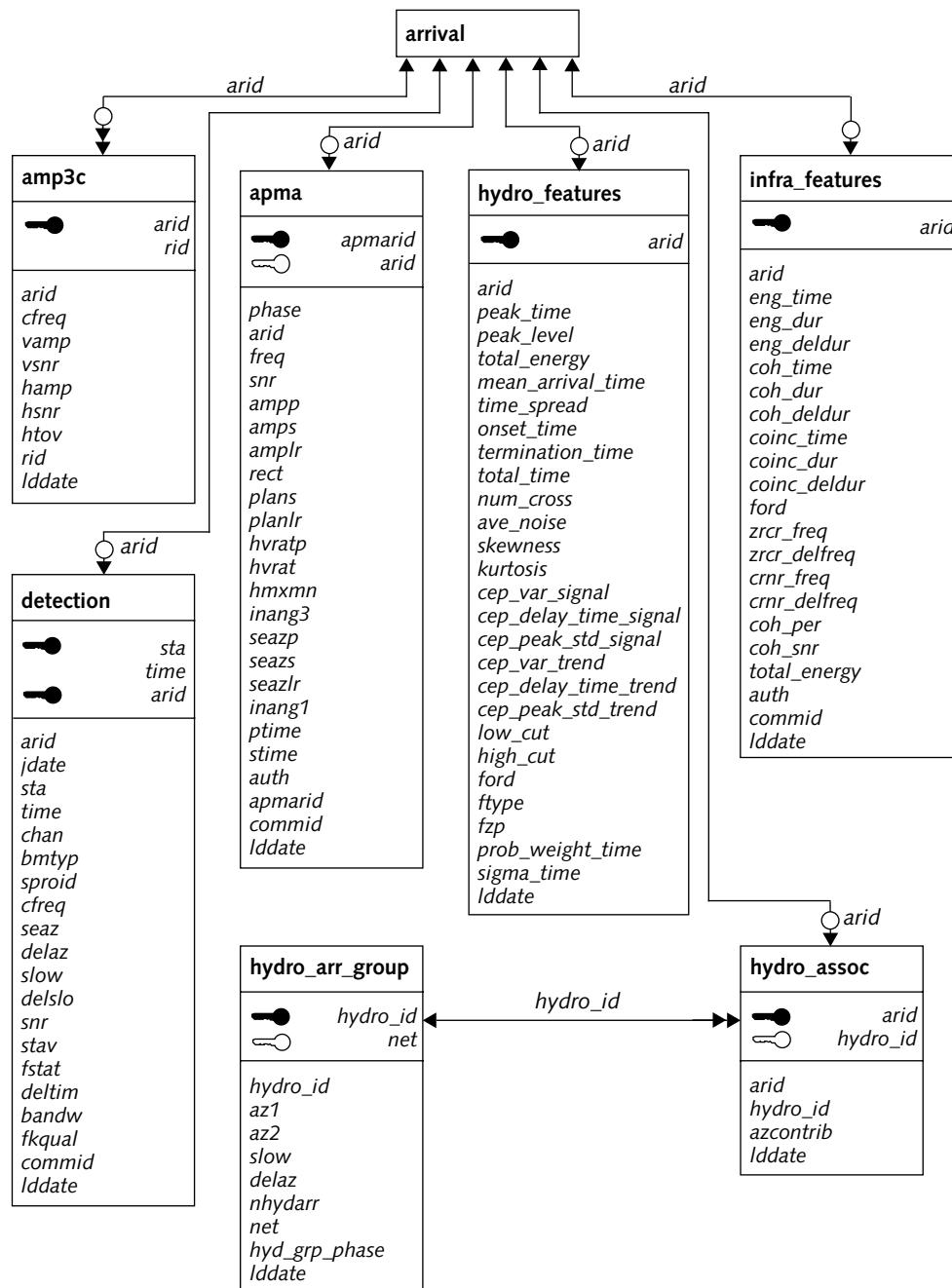


FIGURE 4. DETAIL TABLES RELATED TO ARRIVAL

## ▼ S/H/I Entity Relationships

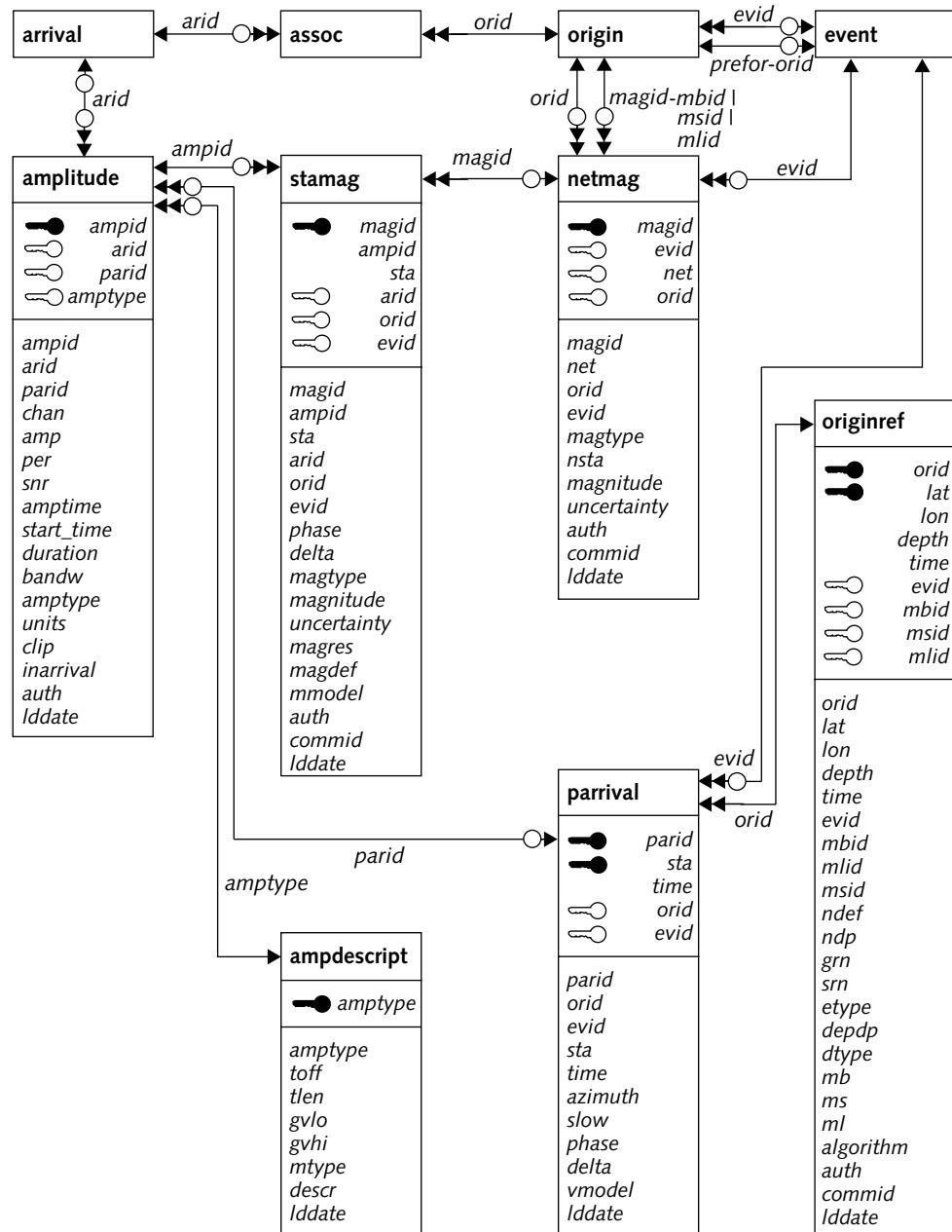


FIGURE 5. MEASUREMENT TABLE RELATIONSHIPS

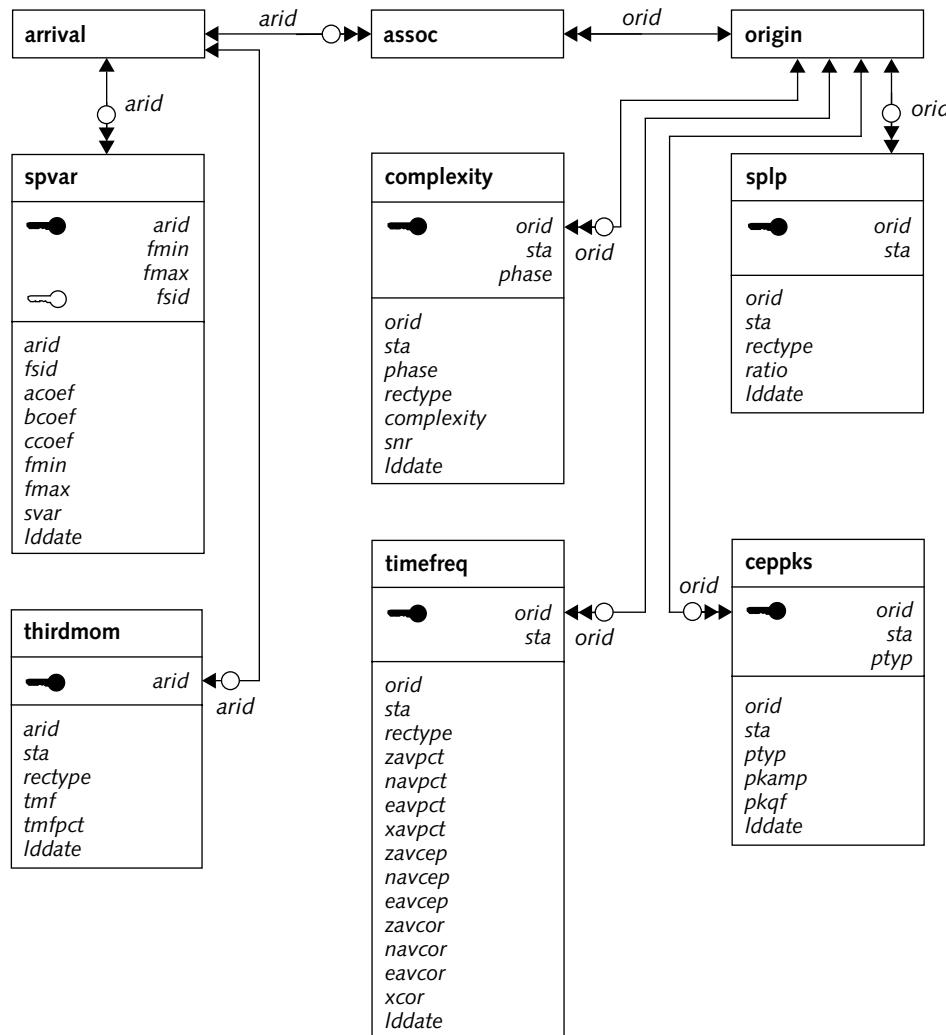


FIGURE 6. EVENT CHARACTERIZATION TABLE RELATIONSHIPS

### Waveforms

The waveform tables include **wfdisc**, **wfaux**, and **wftag** (see Figure 7). The **wfdisc** table is related to most other tables through the **wftag** table. However, **sta**, **chan**, and **time** are more frequently used to link the **arrival** and **wfdisc** tables directly.

## ▼ S/H/I Entity Relationships

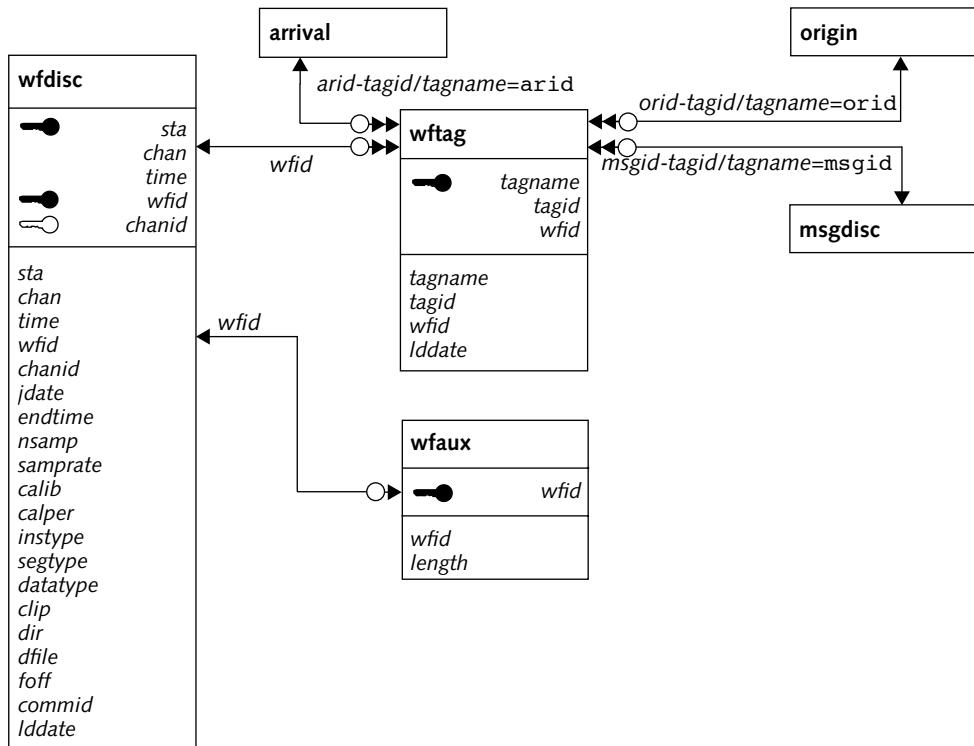


FIGURE 7. WAVEFORM TABLE RELATIONSHIPS

**REFERENCE TABLES**

The reference tables are fairly static and primarily contain look-up information. Figure 8 is an overview of the tables in this category. As with Figure 2, no column names are provided, and tables in the core set are noted. Tables shown by name only are core tables that were previously shown in Figure 2.

**Network**

Figure 9 shows tables related to networks, which are collections of stations across wide geographic areas. Network tables include information on the names of the networks, the stations included in them, the participation of the stations in the network, and geographic and seismic region information.

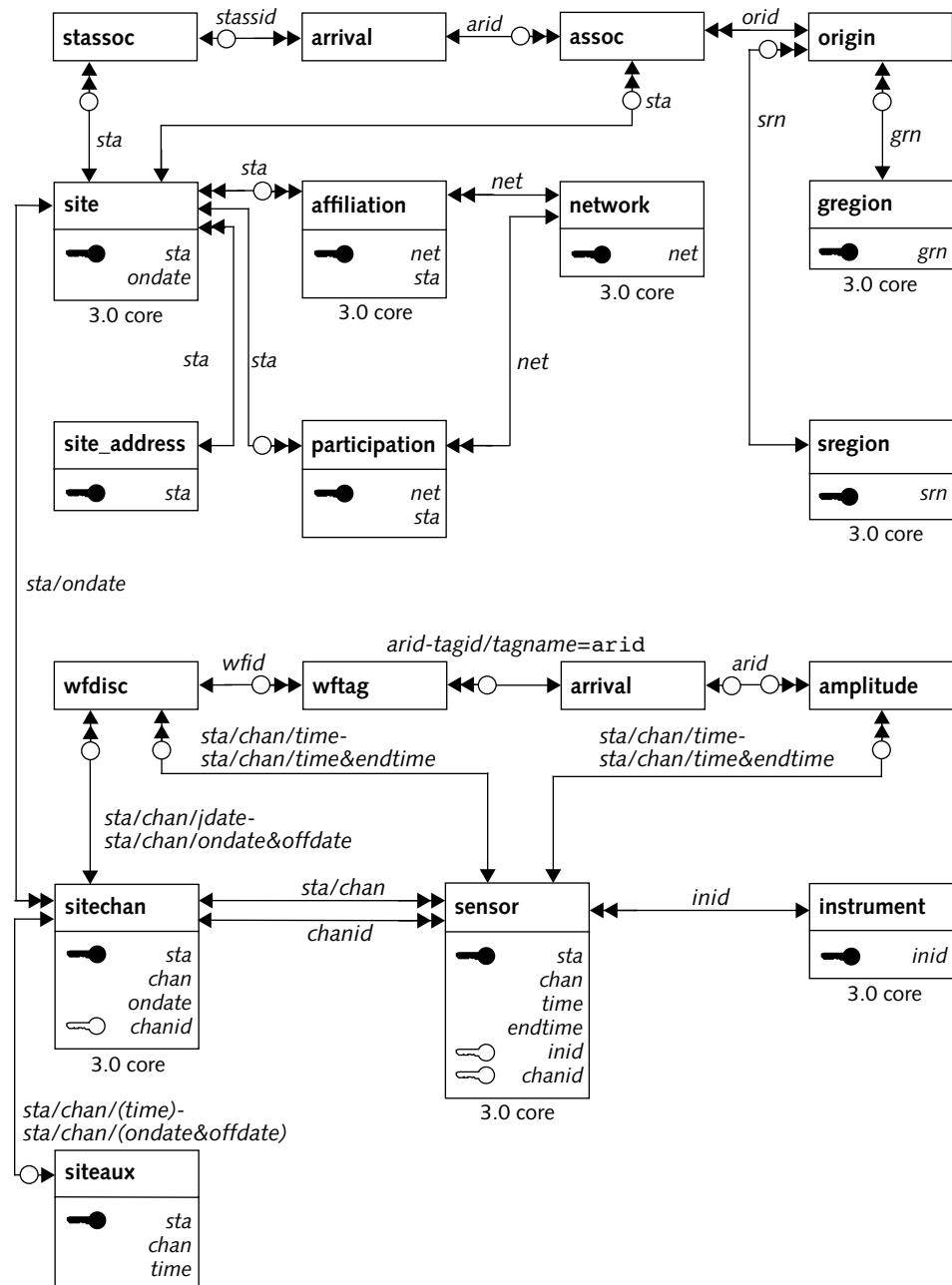


FIGURE 8. REFERENTIAL CORE TABLE RELATIONSHIPS

## ▼ S/H/I Entity Relationships

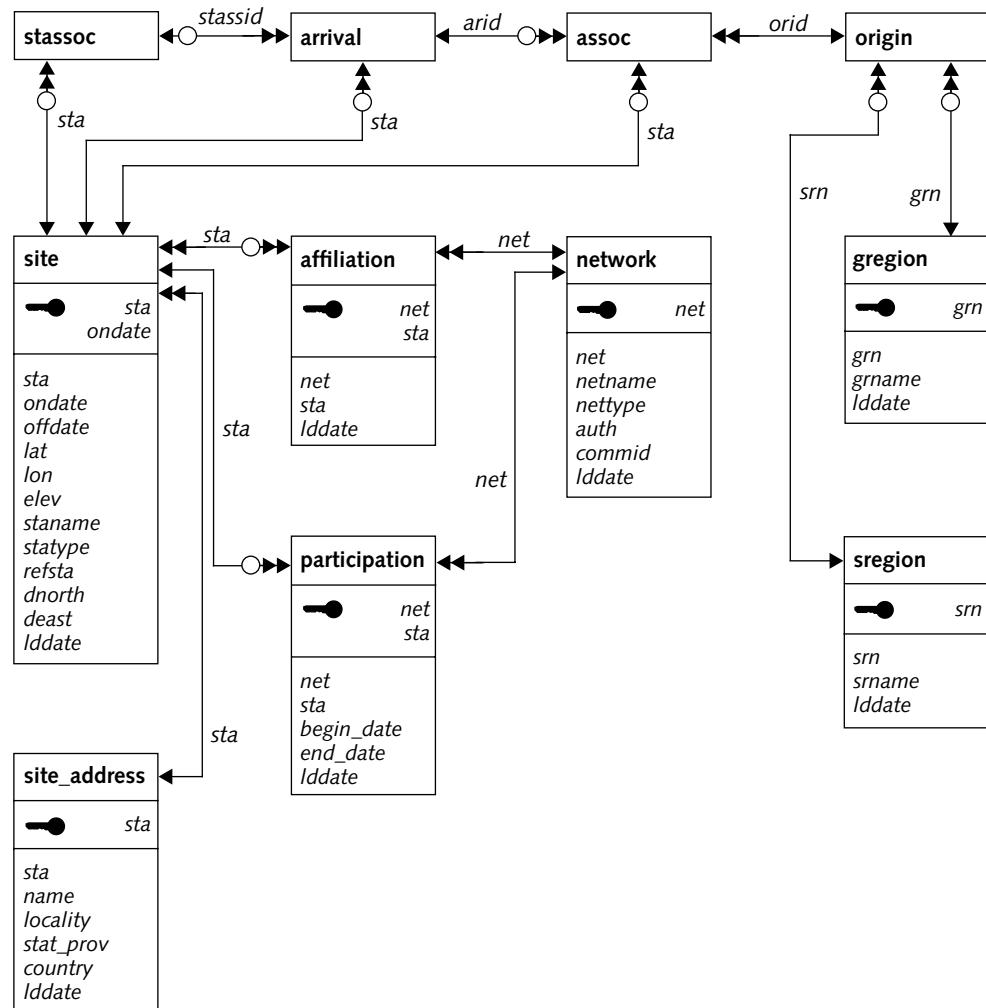


FIGURE 9. NETWORK TABLE RELATIONSHIPS

## Channel

Figure 10 shows tables that contain specific information about the data channels of the IMS stations. Instrument response information is identified in the **instrument** table. The **sensor** table is linked to it through *inid* and from there to **wfdisc** and **amplitude** through *sta/chan/time*. General data characteristics for any data channel are in **siteaux**.

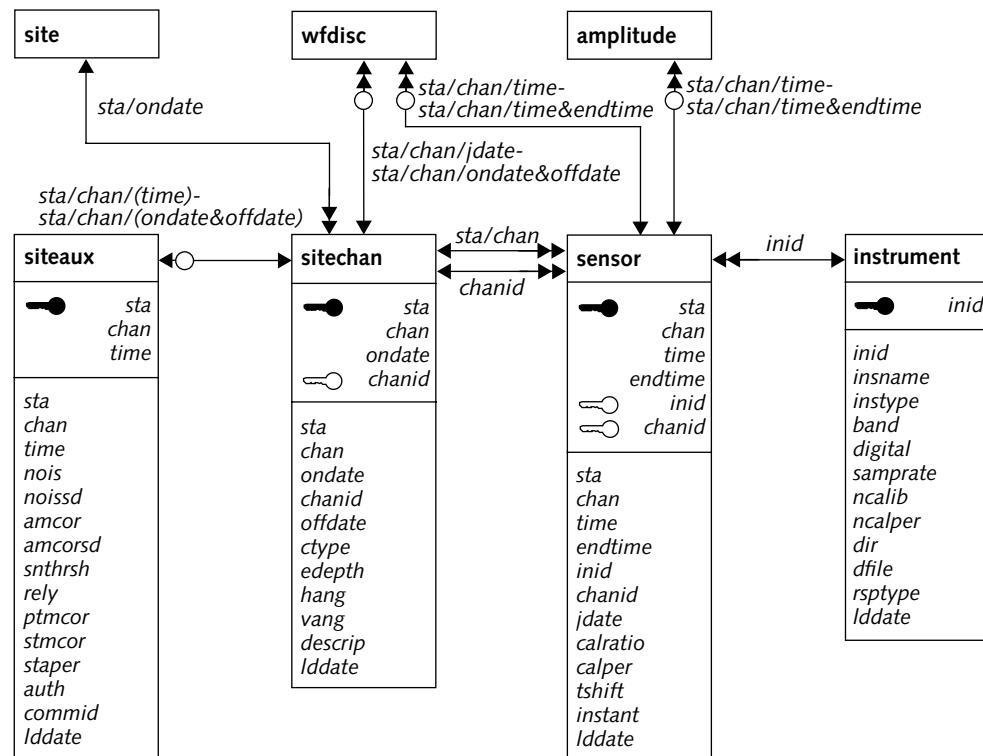


FIGURE 10. CHANNEL TABLE RELATIONSHIPS

▼ S/H/I Entity Relationships

## S/H/I APPLICATION SOFTWARE TABLES

The tables shown in this section are used by fewer applications than those previously described. The tables are organized by computer software configuration items (CSCIs).

### Automatic Processing

The **event\_control** table is used by the event location and magnitude programs to preserve the values of key parameters that analysts set while reviewing the bulletin (see Figure 11), and it is also used in post-analysis processing. The **seisgrid** and **seisindex** hold historical seismicity data. The tables are also used by event quality control software.

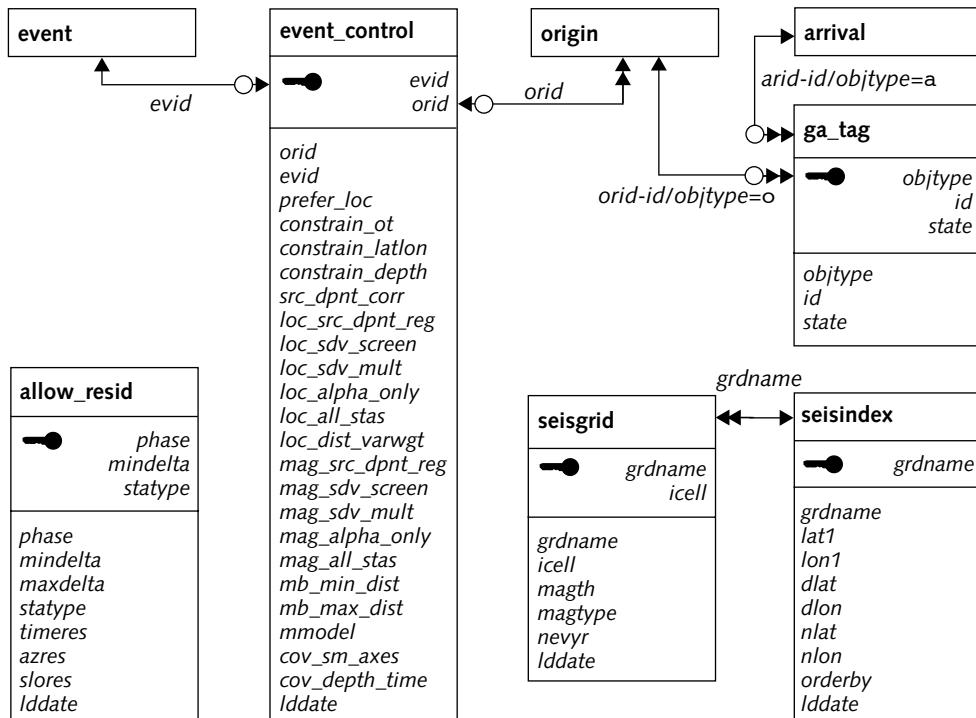


FIGURE 11. RELATIONSHIPS OF TABLES USED IN AUTOMATIC PROCESSING

Event Screening Subsystem uses the tables shown in Figure 12.

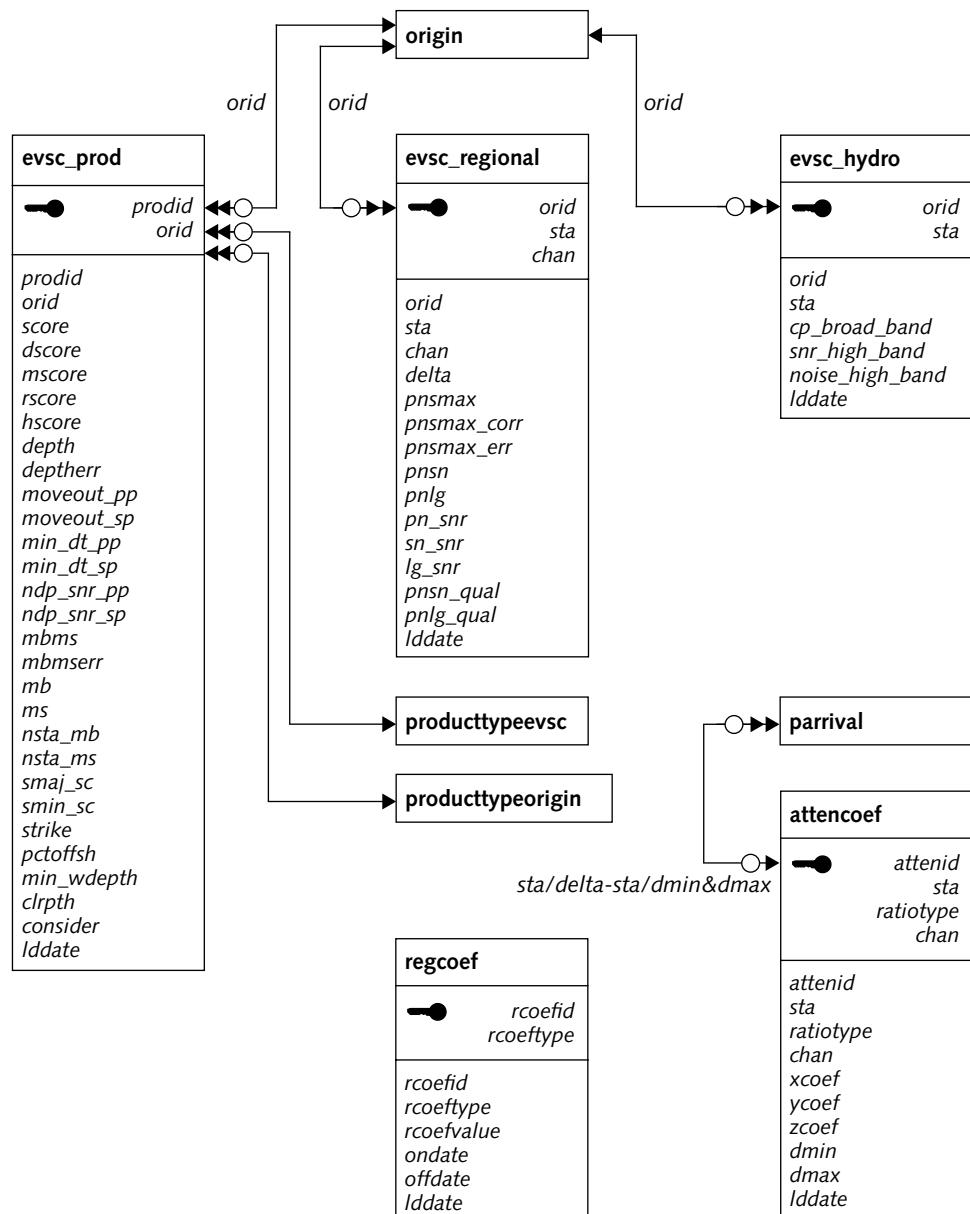


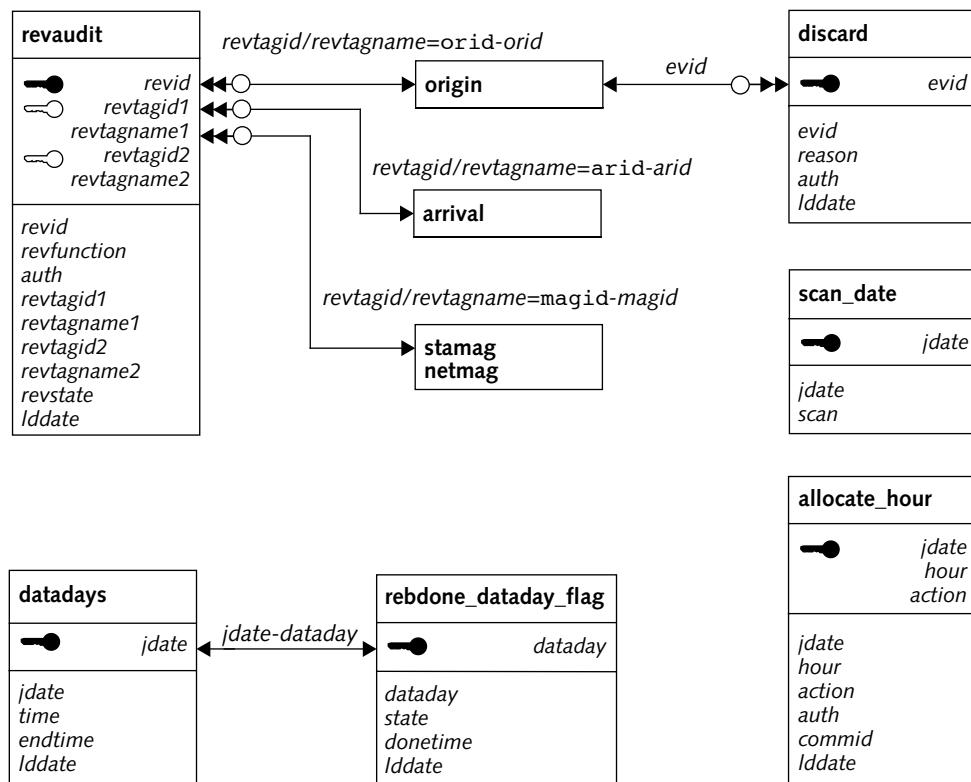
FIGURE 12. EVENT SCREENING TABLE RELATIONSHIPS

▼ S/H/I Entity Relationships

### Interactive Processing

The tables in this group support the work of S/H/I data analysts, but they are not linked to any of the core tables. Figure 13 shows tables involved in scheduling the work of analysts and recording progress. Figure 14 shows tables for the *Map* application. The tables have information about the base maps, as well as overlays and colors.

Interactive analysis frequently includes calculation of frequency spectrums and frequency-wave number spectrums. Figure 15 shows tables that record the results of these calculations.



**FIGURE 13. TABLES INVOLVED IN ANALYST REVIEW OF TIME-SERIES DATA**

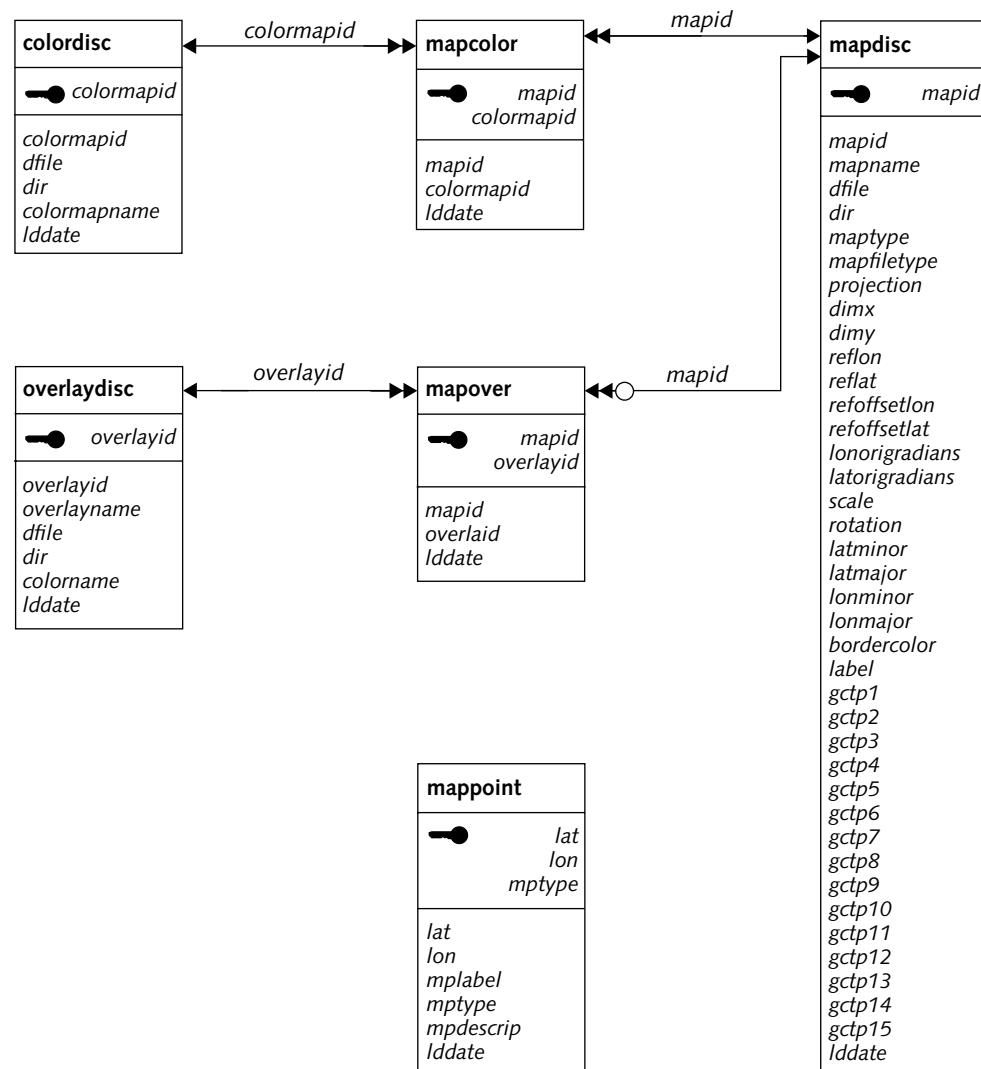
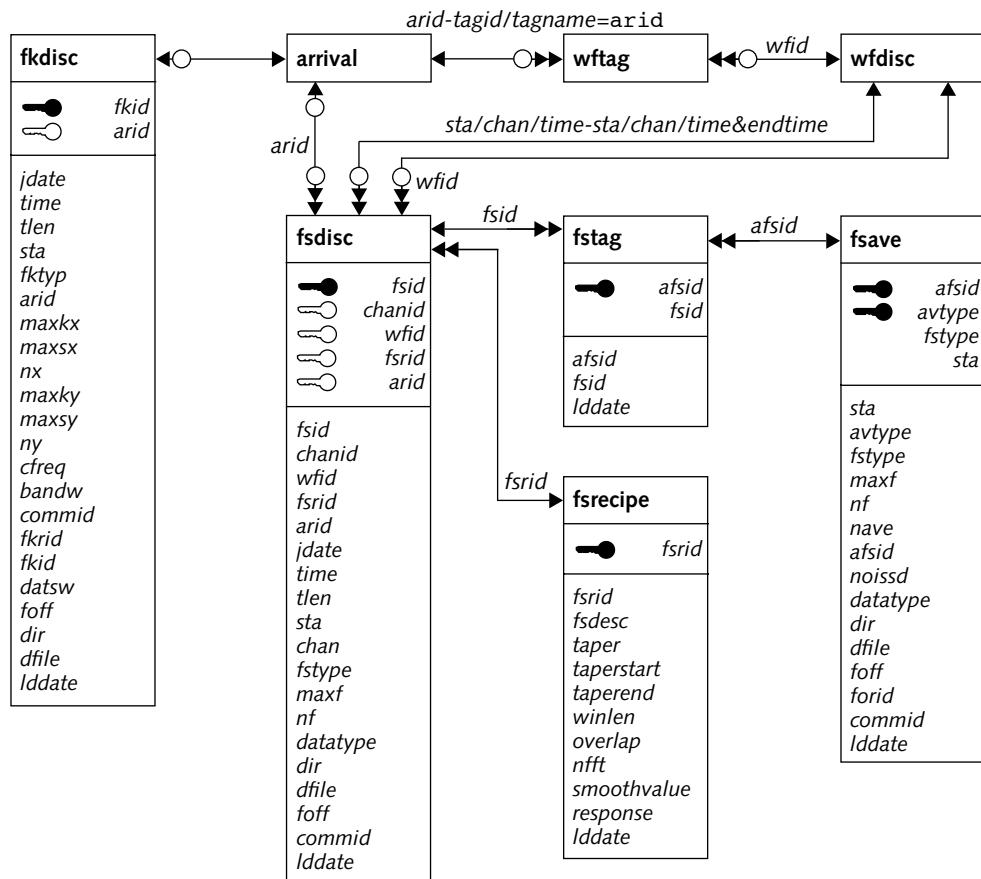


FIGURE 14. MAP TABLE RELATIONSHIPS

## ▼ S/H/I Entity Relationships



**FIGURE 15. RELATIONSHIPS AMONG TABLES USED TO RECORD SPECTRUMS OF TIME-SERIES DATA**

### Distributed Processing

The Distributed Processing CSCI has software that manages jobs and orchestrates the workflow. Two tables (shown in Figure 16) are used by this software as well as by some of the data services applications.

interval	timestamp
 class  name  time  endtime  intvlid	 proclass  procname
 procclass  procname  time  lddate	 intvlid  class  name  time  endtime  state  moddate  lddate

**FIGURE 16. TABLES USED BY DISTRIBUTED PROCESSING APPLICATIONS**

### Data Services

The Data Services CSCI has software to receive and forward continuous time-series data, software of the Message and Subscription Subsystems, and software used to archive time-series data.

Figure 17 shows relationships between tables of the Continuous Data Subsystem. These hold data about computers from which data are provided, computers on which data are stored for processing, and computers to which data are forwarded. Tables are also used by applications that ensure the integrity and completeness of forwarded data.

## ▼ S/H/I Entity Relationships

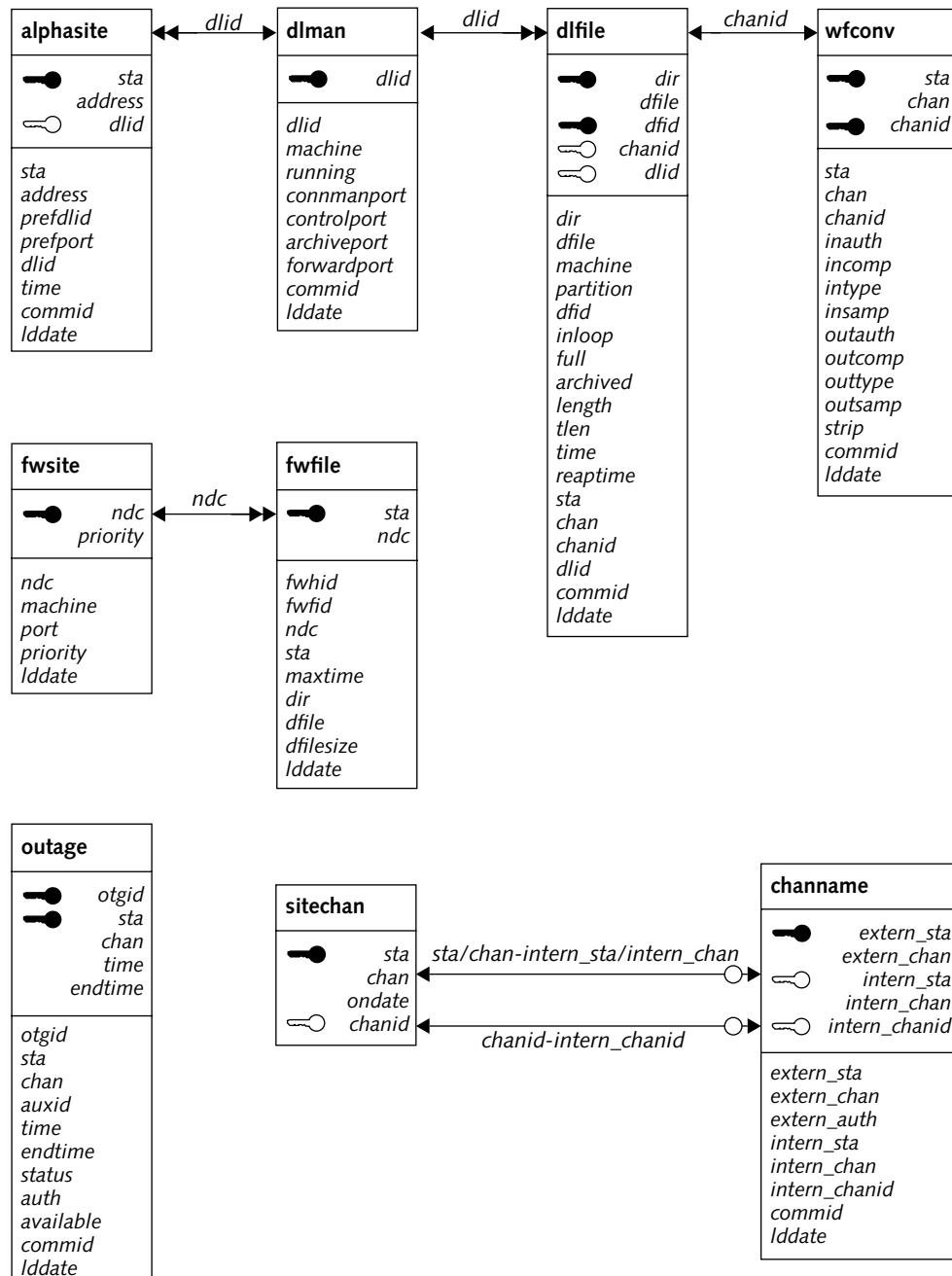


FIGURE 17. CONTINUOUS DATA SUBSYSTEM TABLE RELATIONSHIPS

Figure 18 shows relationships between tables of the Message Subsystem. These tables are used by applications that receive and reply to AutoDRM requests and that make requests for seismic data from stations in the auxiliary network.

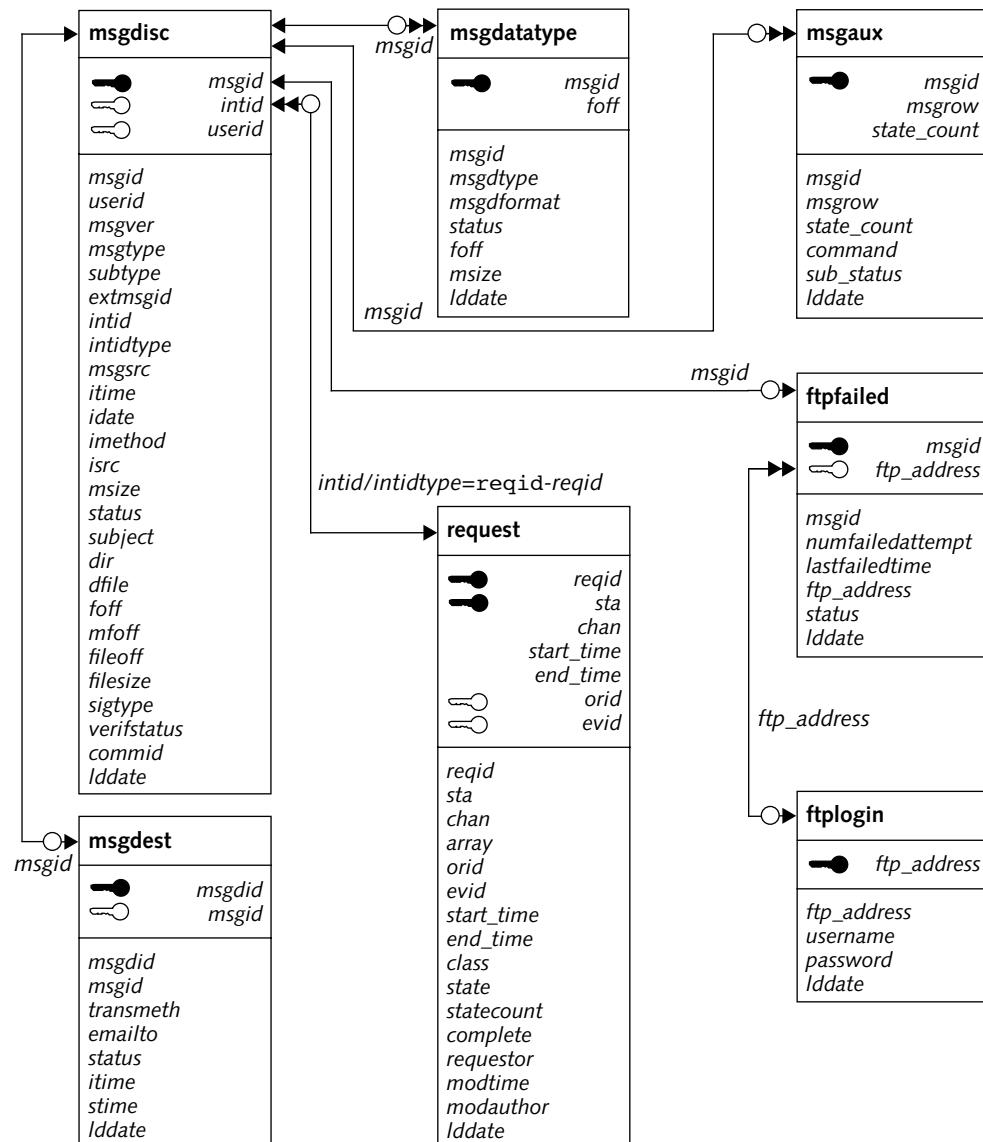


FIGURE 18. MESSAGE SUBSYSTEM TABLE RELATIONSHIPS

## ▼ S/H/I Entity Relationships

Figure 19 shows tables used by the Subscription Subsystem, which notes when products are ready, maintains subscriptions, and tracks subscription processing.

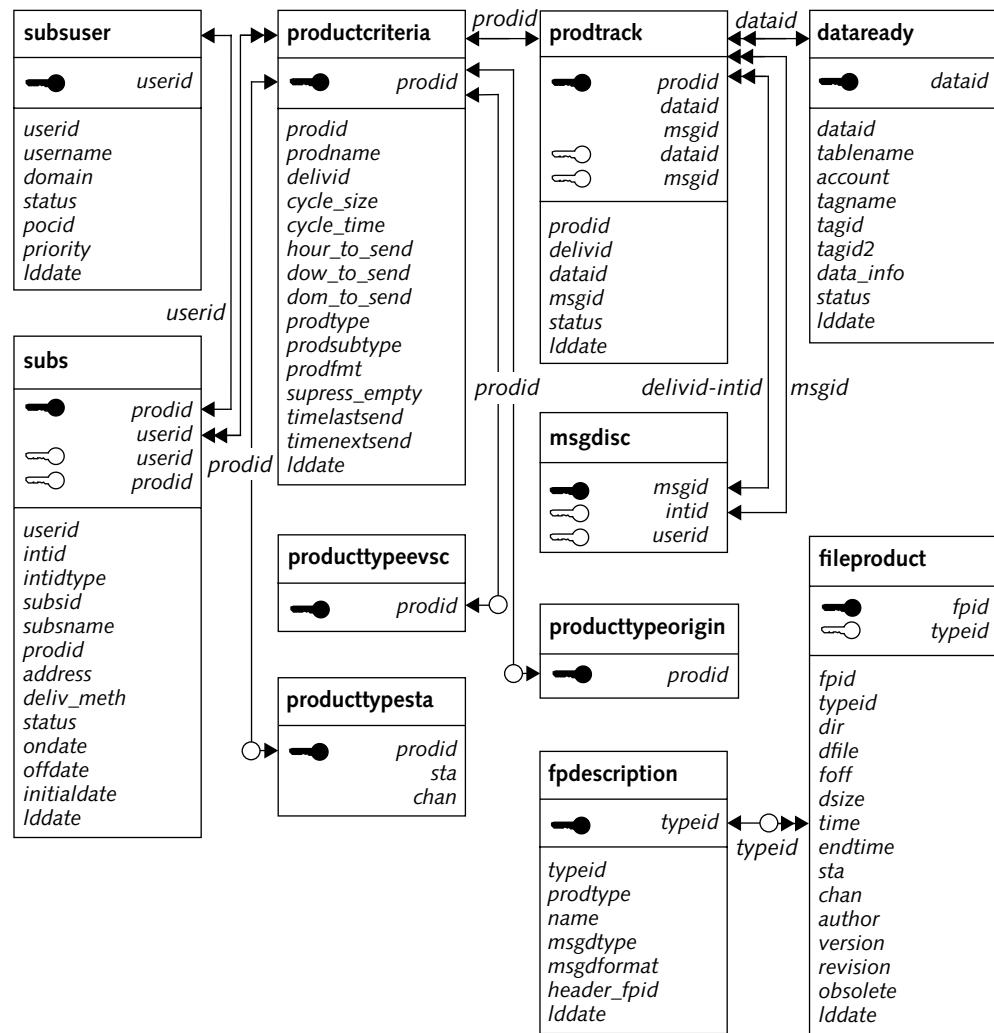
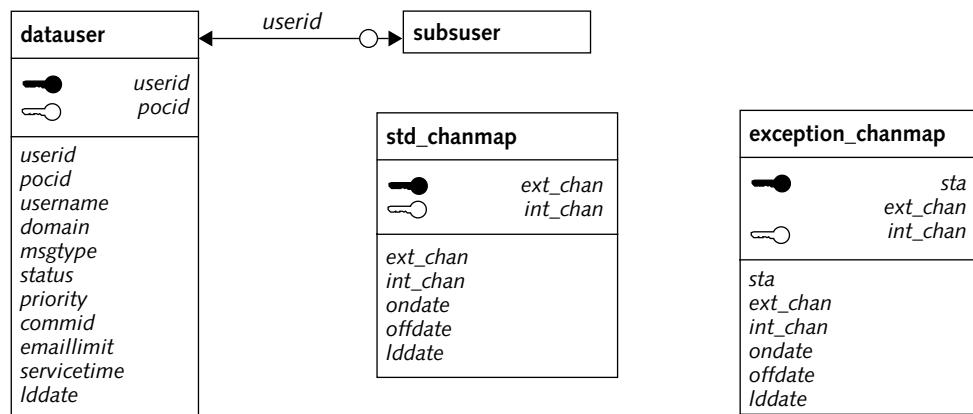


FIGURE 19. SUBSCRIPTION SUBSYSTEM TABLE RELATIONSHIPS

The **datauser** table supports both the Message and Subscription Subsystems. The **std\_chanmap** and **exception\_chanmap** tables are used by the Message Subsystem (*AutoDRM*) and in Performance Monitoring (*stacap*) to map external channel names to channel names used internally (Figure 20).



**FIGURE 20. MESSAGE AND SUBSCRIPTION SUBSYSTEM SUPPORT TABLES**

The tables of the data archiving subsystem contain information used by the software subsystems that migrate database tables between databases and that migrate time-series data to the mass-storage device (see Figure 21).

## ▼ S/H/I Entity Relationships

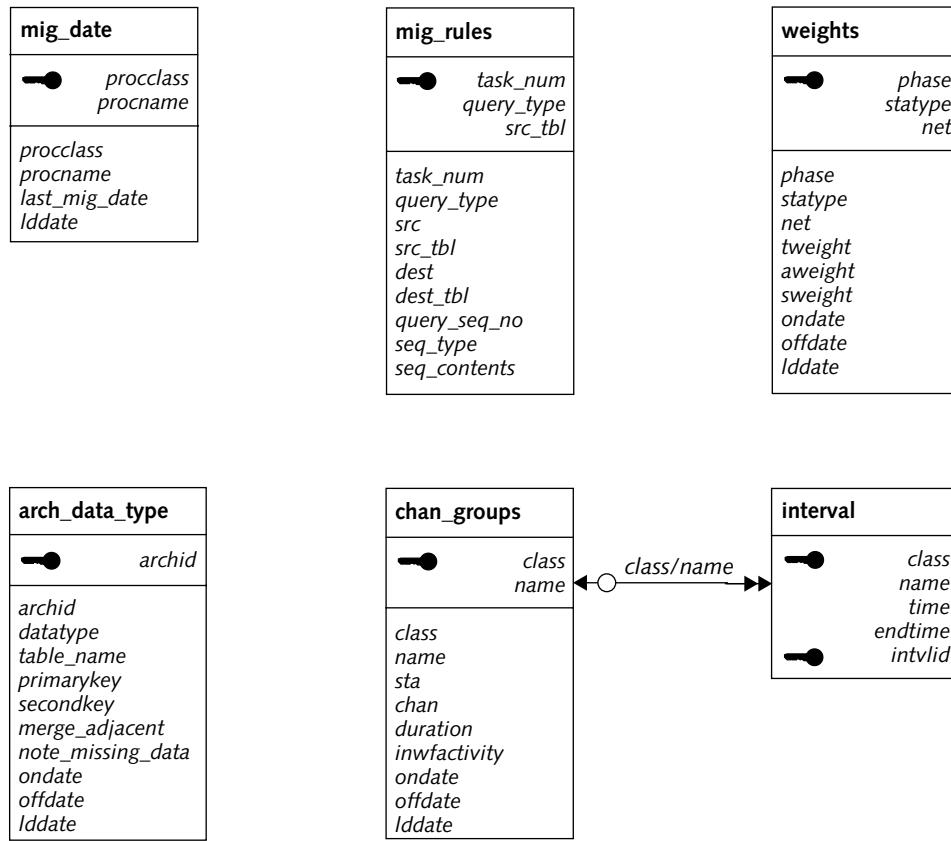


FIGURE 21. DATA ARCHIVING SUBSYSTEM TABLES

### System and Performance Monitoring

The tables of the System Monitoring CSCI track the state of the hardware and software as well as the quality of the scientific results. *Xlogger* is used to record problems discovered in the system. The *sitempoll* table is a list of auxiliary seismic stations and channels that are regularly “polled” to determine their availability. System and performance monitoring applications tables are displayed in Figure 22.

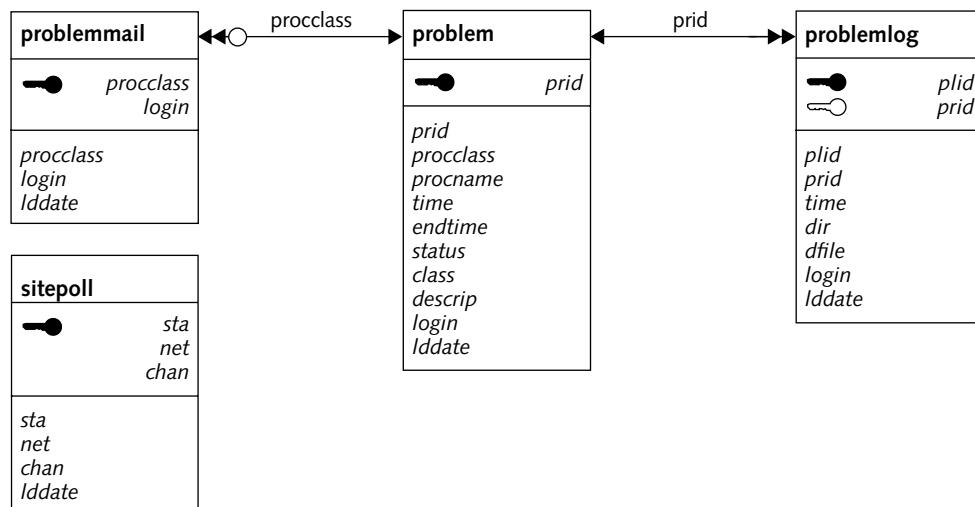


FIGURE 22. TABLES USED BY SYSTEM MONITORING APPLICATIONS

Figure 23 displays tables that hold data pertinent to monitoring scientific performance. The **bull\_comp** table (used by an application of the same name) compares event origins first estimated by automatic analysis against origins finally accepted by analysts. In the figure, the **origin** table on the left exists in the database account for automatic processing, and the **origin** table on the right exists in the account for interactive processing. The **originaux** table holds data that are in bulletins provided by other organizations, but do not fit elsewhere in the schema. The three tables at the bottom of the figure are used by other evaluation applications.

## ▼ S/H/I Entity Relationships

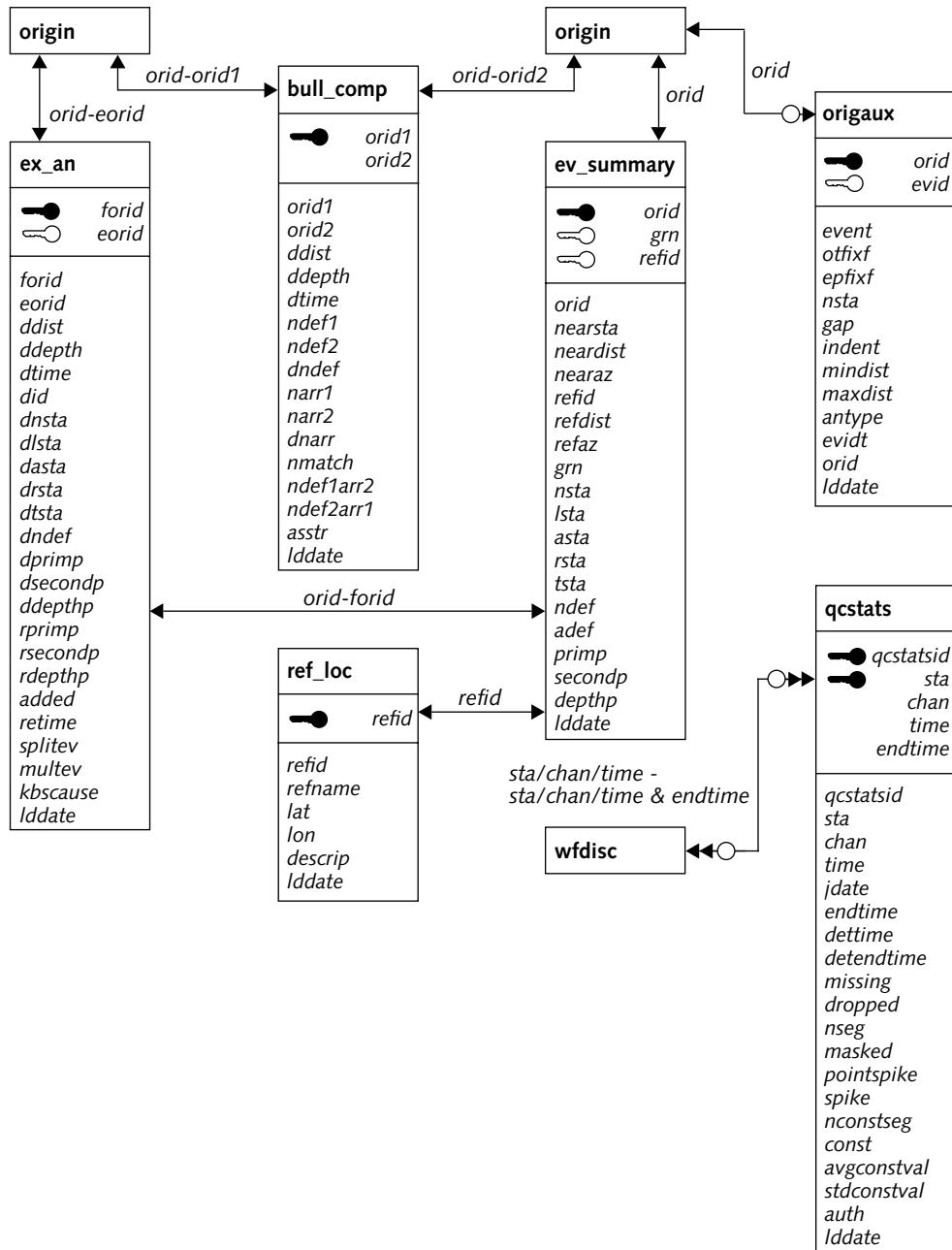


FIGURE 23. TABLES USED FOR PERFORMANCE MONITORING

## Database Support

Several tables facilitate use of the database (see Figure 24). The **remark** table holds text comments for all tables in the schema. **Lastid** is used by all applications that require unique values for surrogate keys. **Na\_value** specifies not-available values for many columns of the schema.

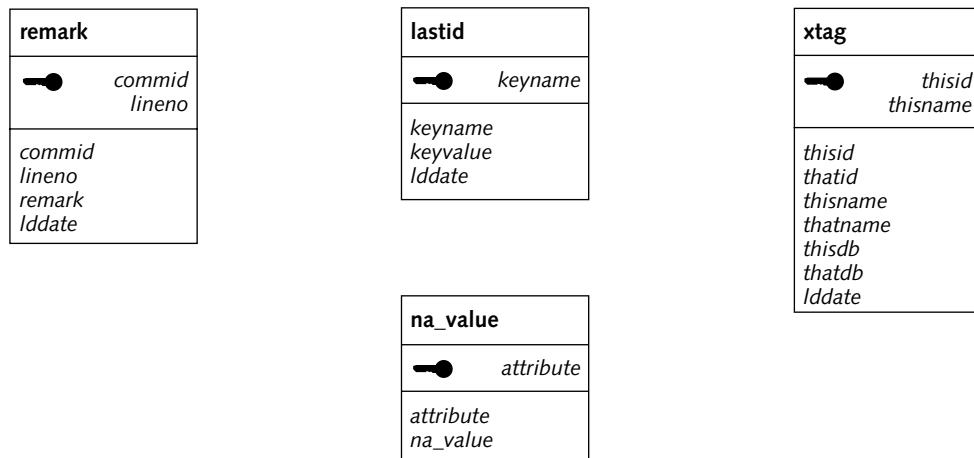


FIGURE 24. TABLES USED TO SUPPORT SCHEMA

## HISTORICAL DATA TABLES

Historical explosion data are kept in tables that describe the locations, times, sizes, names, and other information about the explosions.

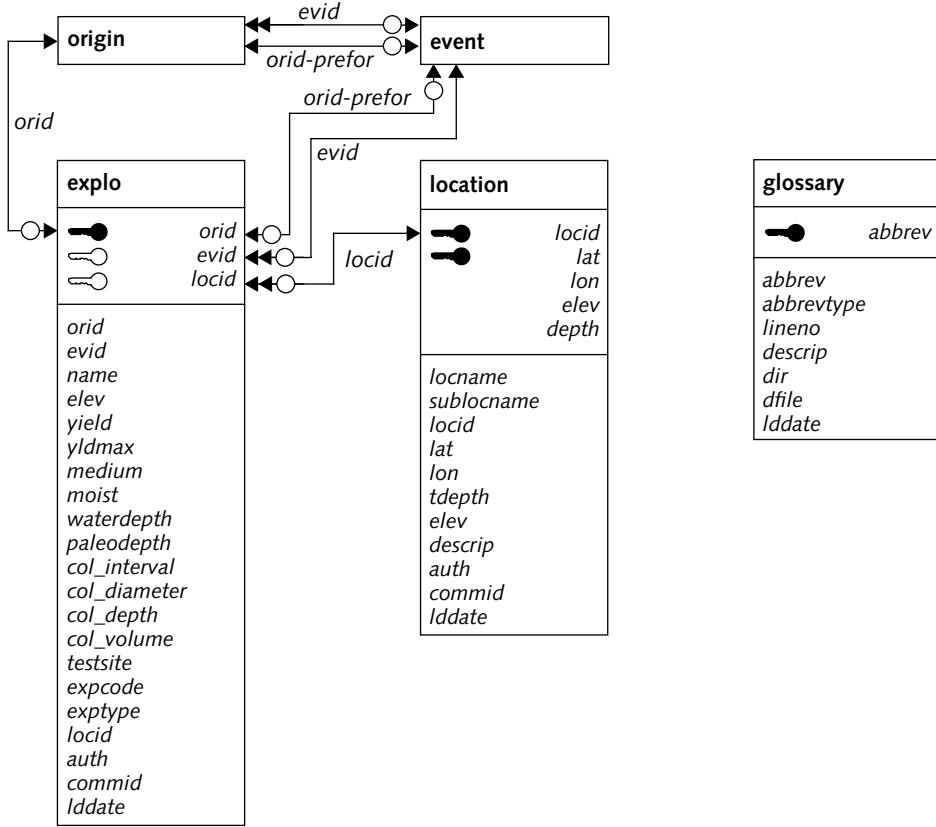


FIGURE 25. TABLES USED TO DESCRIBE EXPLOSIONS

## Chapter 2: S/H/I Table Descriptions

This chapter describes the tables that comprise the PIDC S/H/I Schema and defines the physical structure of each table as it exists within the ORACLE data dictionary. Brief descriptions of the columns are provided for convenience. "Chapter 3: S/H/I Column Descriptions" on page 185 contains detailed descriptions of the columns.

## Chapter 2: S/H/I Table Descriptions

### AFFILIATION, STANET

The **affiliation** table groups stations into networks. The **stanet** table groups array sites into an array “network.”

TABLE 2: AFFILIATION (STANET)

Column	Storage Type	Description
1 <i>net</i>	varchar2(8)	unique network identifier
2 <i>sta</i>	varchar2(6)	station identifier
3 <i>lenddate</i>	date	load date

Category: Core, Reference

Keys: Primary *net/sta*

Data: Descriptive *net, sta*  
Administrative *lenddate*

## **ALLOCATE\_HOUR**

The **allocate\_hour** table is used by the *analyst\_log* application to manage analyst schedules.

**TABLE 3: ALLOCATE\_HOUR**

Column	Storage Type	Description
1 <i>jdate</i>	number(8)	Julian date
2 <i>hour</i>	number(2)	starting hour of analysis
3 <i>action</i>	varchar2(16)	analyst task
4 <i>auth</i>	varchar2(16)	name of analyst
5 <i>commid</i>	number(8)	comment identification
6 <i>lenddate</i>	date	load date

Category: Interactive Processing

Keys: Primary *jdate/hour/action*  
Foreign *commid*

Data: Descriptive *action, auth*  
Measurement *jdate, hour*  
Administrative *lenddate*

▼ S/H/I Table Descriptions

## ALLOW\_RESID

The **allow\_resid** table contains the allowable maximums for the absolute values of residuals for time, azimuth, and slowness. The allowed residuals are a function of phase type and station type (single station or array), and for each of these, the allowed residuals may vary for different distance ranges. A negative value for the residual indicates an arrival field that is not permitted to be defining for that *phase*, *statype*, and distance range.

**TABLE 4: ALLOW\_RESID**

Column	Storage Type	Description
1 <i>phase</i>	varchar2(8)	associated phase
2 <i>mindelta</i>	float(24)	minimum station to event distance
3 <i>maxdelta</i>	float(24)	maximum station to event distance
4 <i>statype</i>	varchar2(4)	station type: single station, array
5 <i>timeres</i>	float(24)	time residual
6 <i>azres</i>	float(24)	azimuth residual
7 <i>slores</i>	float(24)	slowness residual
8 <i>lenddate</i>	date	load date

Category: Automatic Processing

Keys: Primary *phase/mindelta/statype*

Data: Descriptive *phase, statype*  
 Measurement *mindelta, maxdelta, timeres, azres, slores*  
 Administrative *lenddate*

## ALPHASITE

The **alphasite** table is used for tracking continuous data connections by the *DLMAN* application. For a given station, there must be a row in the table for each address from which the station may send continuous data. *Prefdlid* and *prefport* describe the preferred *DLMAN* connection for the station. *DLMAN* fills in *dlid* and *time* while a station is actively connected. *Dlid* indicates to which *dlid* the station is currently connected (may be different from *prefdlid*), and *time* is the system time for the last activity on the station's connection (not the time of any data received). For stations that are not connected, *time* and *dlid* are zero (0).

**TABLE 5: ALPHASITE**

Column	Storage Type	Description
1 <i>sta</i>	varchar2(6)	station code
2 <i>address</i>	varchar2(16)	source internet address
3 <i>prefdlid</i>	number(8)	<i>dlid</i> for preferred DLMAN
4 <i>prefport</i>	number(6)	preferred network port
5 <i>dlid</i>	number(8)	<i>dlid</i> handling station
6 <i>time</i>	float(53)	clock time of most recent activity
7 <i>commid</i>	number(8)	comment identifier
8 <i>Iddate</i>	date	load date

Category: Data Services

Keys: Primary *sta/address*  
Foreign *dlid, commid*

Data: Descriptive *sta, address, prefdlid, prefport, dlid*  
Measurement *time*  
Administrative *Iddate*

▼ S/H/I Table Descriptions

## AMP3C

The **amp3c** table contains amplitude measurements made on three-component data for a specific detection.

**TABLE 6: AMP3C**

Column	Storage Type	Description
1 <i>arid</i>	number(8)	arrival identifier
2 <i>cfreq</i>	float(24)	center frequency of filter band amplitude is measured on
3 <i>vamp</i>	float(24)	vertical amplitude
4 <i>vsnr</i>	float(24)	vertical signal-to-noise ratio
5 <i>hamp</i>	float(24)	horizontal amplitude
6 <i>hsnr</i>	float(24)	horizontal signal-to-noise ratio
7 <i>htov</i>	float(24)	horizontal to vertical amplitude ratio
8 <i>rid</i>	varchar2(8)	recipe identifier
9 <i>lenddate</i>	date	load date

Category: Fundamental

Keys: Primary      *arid/rid*

Data: Descriptive      *rid*  
           Measurement      *cfreq, vamp, vsnr, hamp, hsnr, htov*  
           Administrative      *lenddate*

## AMPDESCRIPT

The **ampdescript** table contains descriptions of how amplitude measurements in **amplitude** were made.

**TABLE 7: AMPDESCRIPT**

Column	Storage Type	Description
1 <i>amptype</i>	varchar2(8)	amplitude measure descriptor
2 <i>toff</i>	float(24)	offset from theoretical or observed arrival time
3 <i>tlen</i>	float(24)	duration of measurement window
4 <i>gvlo</i>	float(24)	low group velocity for measurement window (km/sec)
5 <i>gvhi</i>	float(24)	high group velocity for measurement window (km/sec)
6 <i>mtype</i>	varchar2(8)	measurement type
7 <i>descr</i>	varchar2(255)	description
8 <i>Iddate</i>	date	load date

Category: Fundamental

Keys: Primary      *amptype*

Data: Descriptive      *amptype, mtype, descr*  
           Measurement      *toff, tlen, gvlo, gvhi*  
           Administrative      *Iddate*

▼ S/H/I Table Descriptions

## AMPLITUDE

The **amplitude** table contains arrival-based and origin-based amplitude measurements. The amplitude measurement is described in **ampdescript**.

**TABLE 8: AMPLITUDE**

Column	Storage Type	Description
1 <i>ampid</i>	number(8)	amplitude identifier
2 <i>arid</i>	number(8)	arrival identifier
3 <i>parid</i>	number(8)	predicted arrival identifier
4 <i>chan</i>	varchar2(8)	channel code
5 <i>amp</i>	float(24)	amplitude (nm)
6 <i>per</i>	float(24)	period (s)
7 <i>snr</i>	float(24)	signal-to-noise ratio
8 <i>amptime</i>	float(53)	time of amplitude measure
9 <i>start_time</i>	float(53)	start time of measurement window
10 <i>duration</i>	float(24)	duration of measurement window
11 <i>bandw</i>	float(24)	bandwidth
12 <i>amptype</i>	varchar2(8)	amplitude measure descriptor
13 <i>units</i>	varchar2(15)	units
14 <i>clip</i>	varchar2(1)	clipped flag
15 <i>inarrival</i>	varchar2(1)	"y" or "n" flag indicating if <i>amp</i> is the same as the <i>amp</i> in the <b>arrival</b> table
16 <i>auth</i>	varchar2(15)	author
17 <i>ldate</i>	date	load date

Category: Fundamental

Keys: Primary      *ampid*  
Foreign      *arid, parid, amptype*

Data: Descriptive      *chan, amptype, units, inarrival*  
Measurement      *amp, per, snr, amptime, start\_time, duration, bandw,*  
Administrative      *clip*  
                      *auth, Iddate*

▼ **S/H/I Table Descriptions**

## APMA

The **apma** table contains results of particle motion analysis for a specific detection.

**TABLE 9: APMA**

Column	Storage Type	Description
1 <i>phase</i>	varchar2(8)	phase
2 <i>arid</i>	number(8)	arrival identifier
3 <i>freq</i>	float(24)	frequency
4 <i>snr</i>	float(24)	signal-to-noise ratio
5 <i>ampp</i>	float(24)	P-phase amplitude
6 <i>amps</i>	float(24)	S-phase amplitude
7 <i>amplr</i>	float(24)	Rayleigh-phase amplitude
8 <i>rect</i>	float(24)	rectilinearity
9 <i>plans</i>	float(24)	S-phase planarity
10 <i>planlr</i>	float(24)	Rayleigh-phase planarity
11 <i>hvratp</i>	float(24)	P-phase horizontal-to-vertical ratio
12 <i>hvrat</i>	float(24)	S-phase horizontal-to-vertical ratio
13 <i>hmxmn</i>	float(24)	maximum-to-minimum horizontal ratio
14 <i>inang3</i>	float(24)	short-axis incidence angle
15 <i>seazp</i>	float(24)	P-phase observed azimuth
16 <i>seazs</i>	float(24)	S-phase observed azimuth
17 <i>seazlr</i>	float(24)	Rayleigh-phase observed azimuth
18 <i>inang1</i>	float(24)	long-axis incidence angle
19 <i>ptime</i>	float(53)	P-phase extraction time
20 <i>stime</i>	float(53)	S-phase extraction time
21 <i>auth</i>	varchar2(15)	author

TABLE 9: APMA (CONTINUED)

Column	Storage Type	Description
22 <i>apmarid</i>	number(8)	apma recipe identifier
23 <i>commid</i>	number(8)	comment identifier
24 <i>Iddate</i>	date	load date

Category: Fundamental

Keys: Primary *apmarid*  
Foreign *arid, commid*

Data: Descriptive *phase*  
Measurement *freq, snr, ampp, amps, amplr, rect, plans, planlr,*  
*hvratp, hvrat, hmxmn, inang3, seazp, seazs, seazlr,*  
*inang1, ptime, stime*  
Administrative *auth, Iddate*

▼ **S/H/I Table Descriptions**

## **ARCH\_DATA\_TYPE**

The **arch\_data\_type** table contains information used by the archiving software.

**TABLE 10: ARCH\_DATA\_TYPE**

Column	Storage Type	Description
1 <i>archid</i>	number(8)	Archive row identifier
2 <i>datatype</i>	varchar2(24)	data type (or class of data)
3 <i>table_name</i>	varchar2(32)	name of the table encapsulating the data type
4 <i>primarykey</i>	varchar2(24)	not used
5 <i>secondkey</i>	varchar2(24)	not used
6 <i>merge_adjacent</i>	varchar2(2)	y indicates Archive should merge adjacent rows
7 <i>note_missing_data</i>	varchar2(2)	indicates that this data type is for late arriving data
8 <i>ondate</i>	number(8)	first date this row is valid
9 <i>offdate</i>	number(8)	last date this row is valid
10 <i>lenddate</i>	date	load date

Category: Core, Fundamental

Keys: Primary      *archid*

Data: Descriptive      *datatype, table\_name, primarykey, secondkey, merge\_adjacent, note\_missing\_data, ondate, offdate, lendate*  
Administrative

## ARRIVAL

The **arrival** table contains summary information about arrivals.

**TABLE 11: ARRIVAL**

Column	Storage Type	Description
1 <i>sta</i>	varchar2(6)	station code
2 <i>time</i>	float(53)	epoch time
3 <i>arid</i>	number(8)	arrival identifier
4 <i>jdate</i>	number(8)	Julian date
5 <i>stassid</i>	number(8)	stassoc identifier
6 <i>chanid</i>	number(8)	instrument identifier
7 <i>chan</i>	varchar2(8)	channel code
8 <i>iphase</i>	varchar2(8)	reported phase
9 <i>stype</i>	varchar2(1)	signal type
10 <i>deltim</i>	float(24)	time uncertainty
11 <i>azimuth</i>	float(24)	observed azimuth
12 <i>delaz</i>	float(24)	azimuth uncertainty
13 <i>slow</i>	float(24)	observed slowness, seconds/degree
14 <i>delslo</i>	float(24)	slowness uncertainty
15 <i>ema</i>	float(24)	emergence angle
16 <i>rect</i>	float(24)	rectilinearity
17 <i>amp</i>	float(24)	amplitude, instrument corrected, nm
18 <i>per</i>	float(24)	period
19 <i>logat</i>	float(24)	$\log(\text{amp}/\text{per})$
20 <i>clip</i>	varchar2(1)	clipped flag
21 <i>fm</i>	varchar2(2)	first motion
22 <i>snr</i>	float(24)	signal-to-noise ratio

## ▼ S/H/I Table Descriptions

**TABLE 11: ARRIVAL (CONTINUED)**

<b>Column</b>	<b>Storage Type</b>	<b>Description</b>
23 <i>qual</i>	varchar2(1)	signal onset quality
24 <i>auth</i>	varchar2(15)	author
25 <i>commid</i>	number(8)	comment identifier
26 <i>Iddate</i>	date	load date

Category: Core, Fundamental

Keys:	Primary Alternate Foreign	<i>sta/time</i> <i>arid</i> <i>stassid, chanid, commid</i>
Data:	Descriptive Measurement Administrative	<i>sta, chan, iphase, stype</i> <i>time, jdate, deltim, azimuth, delaz, slow, delslo,</i> <i>ema, rect, amp, per, logat, clip, fm, snr, qual</i> <i>auth, Iddate</i>

## ASSOC, ASSOC\_TEMP\_GA

The **assoc** table contains information that connects arrivals (entries in the **arrival** table) to a particular origin. The **assoc\_temp\_ga** table is used by the Global Association (GA) application to store temporary associations.

**TABLE 12: ASSOC (ASSOC\_TEMP\_GA)**

Column	Storage Type	Description
1 <i>arid</i>	number(8)	arrival identifier
2 <i>orid</i>	number(8)	origin identifier
3 <i>sta</i>	varchar2(6)	station code
4 <i>phase</i>	varchar2(8)	associated phase
5 <i>belief</i>	float(24)	phase confidence
6 <i>delta</i>	float(24)	station-to-event distance
7 <i>seaz</i>	float(24)	station-to-event azimuth
8 <i>esaz</i>	float(24)	event-to-station azimuth
9 <i>timeres</i>	float(24)	time residual
10 <i>timedef</i>	varchar2(1)	time = defining (d), nondefining (n)
11 <i>azres</i>	float(24)	azimuth residual
12 <i>azdef</i>	varchar2(1)	azimuth = defining (d), nondefining (n)
13 <i>slores</i>	float(24)	slowness residual
14 <i>slodef</i>	varchar2(1)	slowness = defining (d), nondefining (n)
15 <i>emares</i>	float(24)	incidence angle residual
16 <i>wgt</i>	float(24)	location weight
17 <i>vmodel</i>	varchar2(15)	velocity model
18 <i>commid</i>	number(8)	comment identifier
19 <i>lddate</i>	date	load date

**▼ S/H/I Table Descriptions**

Category: Core, Fundamental

Keys: Primary      *arid/orid*  
Foreign      *commid*

Data: Descriptive      *sta, phase, belief, wgt, vmodel*  
Measurement      *delta, seaz, esaz, timeres, timedef, azres, azdef,*  
Administrative      *slores, slodef, emares*  
                        *lenddate*

## ATTENCOEF

The **attencoef** table contains station-specific attenuation corrections for regional analysis.

**TABLE 13: ATTENCOEF**

Column	Storage Type	Description
1 <i>attenid</i>	varchar2(20)	attenuation coefficient set identifier
2 <i>sta</i>	varchar2(6)	station code
3 <i>ratiotype</i>	varchar2(6)	amplitude ratio identifier
4 <i>chan</i>	varchar2(8)	channel code
5 <i>xcoef</i>	float(24)	constant coefficient
6 <i>ycoef</i>	float(24)	geometrical spreading coefficient
7 <i>zcoef</i>	float(24)	attenuation coefficient
8 <i>dmin</i>	float(24)	minimum distance of applicability
9 <i>dmax</i>	float(24)	maximum distance of applicability
10 <i>lenddate</i>	date	load date

Category: Fundamental

Keys: Primary      *attenid/sta/ratiotype/chan*

Data: Measurement      *xcoef, ycoef, zcoef, dmin, dmax*  
Administrative      *lenddate*

**▼ S/H/I Table Descriptions****BEAMAUX**

The **beamaux** table is a view into the **sensor** and **instrument** tables.

**TABLE 14: BEAMAUX**

Column	Storage Type	Description
1 <i>sta</i>	varchar2(6)	station code
2 <i>chan</i>	varchar2(8)	channel code
3 <i>ncalib</i>	float(24)	nominal calibration
4 <i>ncalper</i>	float(24)	nominal calibration period
5 <i>time</i>	float(53)	epoch time of beginning of beam
6 <i>endtime</i>	float(53)	epoch time of end of beam

Category: Data Services

Keys: Primary *sta/chan/time*

Data: Descriptive *sta, chan, ncalib, ncalper*  
Measurement *time, endtime*

**BULL\_COMP**

The **bull\_comp** table contains results from the *BullComp* application of the comparison of two seismic bulletins. The information summarizes the differences between event solutions that share common associated arrivals, or (if no arrival information is available) whose locations and time uncertainties overlap.

**TABLE 15: BULL\_COMP**

Column	Storage Type	Description
1 <i>orid1</i>	number(8)	origin identifier from bulletin 1
2 <i>orid2</i>	number(8)	origin identifier from bulletin 2
3 <i>ddist</i>	float(24)	difference in distance
4 <i>ddepth</i>	float(24)	difference in depth
5 <i>dtime</i>	float(24)	difference in epoch time
6 <i>ndef1</i>	number(8)	number of time-defining phases for <i>orid1</i>
7 <i>ndef2</i>	number(8)	number of time-defining phases for <i>orid2</i>
8 <i>dndef</i>	number(8)	difference in number of time-defining phases
9 <i>narr1</i>	number(8)	number of associated arrivals for <i>orid1</i>
10 <i>narr2</i>	number(8)	number of associated arrivals for <i>orid2</i>
11 <i>dnarr</i>	number(8)	difference in number of associated arrivals
12 <i>nmatch</i>	number(8)	number of matching arrivals (defining/nondefining)
13 <i>ndef1arr2</i>	number(8)	number of defining arrivals for <i>orid1</i> that are arrivals (either defining or nondefining) for <i>orid2</i>

## ▼ S/H/I Table Descriptions

**TABLE 15: BULL\_COMP (CONTINUED)**

<b>Column</b>	<b>Storage Type</b>	<b>Description</b>
14 <i>ndef2arr1</i>	number(8)	number of defining arrivals for <i>orid2</i> that are arrivals (defining/ nondefining) for <i>orid1</i>
15 <i>asstr</i>	varchar2(1)	association strength (s or w)
16 <i>lenddate</i>	date	load date

Category: System Monitoring

Keys: Primary *orid1/orid2*

Data: Descriptive *asstr*  
 Measurement *ddist, ddepth, dtime, ndef1, ndef2, dnarr, narr1, narr2, dnarr, nmatch, ndef1arr2, ndef2arr1*  
 Administrative *lenddate*

## CEPPKS

The **ceppks** table contains results of cepstral analysis and includes the amplitude and frequency of cepstral peaks that are consistent among multiple phases associated with the same event.

**TABLE 16: CEPPKS**

Column	Storage Type	Description
1 <i>orid</i>	number(8)	origin identifier
2 <i>sta</i>	varchar2(6)	station code
3 <i>ptyp</i>	varchar2(6)	consistent peak type code
4 <i>pkamp</i>	float(24)	consistent peak amplitude
5 <i>pkqf</i>	float(24)	consistent peak quefrency
6 <i>lddate</i>	date	load date

Category: Fundamental

Keys: Primary      *orid/sta/ptyp*

Data: Descriptive      *sta, ptyp*  
           Measurement      *pkamp, pkqf*  
           Administrative      *lddate*

▼ **S/H/I Table Descriptions**

## **CHAN\_GROUPS**

The **chan\_groups** table contains information used by the archiving software.

**TABLE 17: CHAN\_GROUPS**

Column	Storage Type	Description
1 <i>class</i>	varchar2(16)	class (or data type)
2 <i>name</i>	varchar2(16)	name of the grouping
3 <i>sta</i>	varchar2(6)	station name
4 <i>chan</i>	varchar2(8)	channel name
5 <i>duration</i>	number	not used
6 <i>inwfactivity</i>	number(1)	not used
7 <i>ondate</i>	number(8)	first date this row is valid
8 <i>offdate</i>	number(8)	last date this row is valid
9 <i>lenddate</i>	date	load date

Category: Data Services

Keys: Primary      *class/name*

Data: Descriptive      *sta, chan, duration, inwfactivity, ondate, offdate*  
Administrative      *lenddate*

**CHANNAME**

The **channame** table provides mapping between channel and station names.

**TABLE 18: CHANNAME**

Column	Storage Type	Description
1 <i>extern_sta</i>	varchar2(6)	external station name
2 <i>extern_chan</i>	varchar2(8)	external channel name
3 <i>extern_auth</i>	varchar2(20)	external authority using this name
4 <i>intern_sta</i>	varchar2(6)	internal station name
5 <i>intern_chan</i>	varchar2(8)	internal channel name
6 <i>intern_chanid</i>	number(8)	internal channel ID
7 <i>commid</i>	number(8)	comment identifier
8 <i>Iddate</i>	date	load date

Category: Data Services

Keys: Primary: *extern\_sta/extern\_chan*  
          Foreign: *intern\_sta/intern\_chan, intern\_chanid, commid*

Data: Descriptive: *extern\_sta, extern\_chan, intern\_sta, intern\_chan,*  
          Administrative: *intern\_chanid*  
                           *Iddate*

**▼ S/H/I Table Descriptions****COLORDISC**

The **colordisc** table links a unique *colormapid* to a colormap name and disk file.

**TABLE 19: COLORDISC**

Column	Storage Type	Description
1 <i>colormapid</i>	number(8)	colormap identifier
2 <i>dfile</i>	varchar2(32)	data filename
3 <i>dir</i>	varchar2(64)	directory
4 <i>colormapname</i>	varchar2(64)	colormap name
5 <i>lddate</i>	date	load date

Category: Interactive Processing

Keys: Primary      *colormapid*

Data: Descriptive      *colormapname, dfile, dir*  
Administrative      *lddate*

## COMPLEXITY

The **complexity** table contains the complexity event characterization parameter estimated by the Detection and Feature Extraction (*DFX*) application.

**TABLE 20: COMPLEXITY**

Column	Storage Type	Description
1 <i>orid</i>	number(8)	origin identifier
2 <i>sta</i>	varchar2(6)	station name
3 <i>phase</i>	varchar2(6)	phase name
4 <i>rectype</i>	varchar2(8)	recipe type
5 <i>complexity</i>	float(24)	complexity measure
6 <i>snr</i>	float(24)	signal-to-noise ratio
7 <i>Iddate</i>	date	load date

Category: Fundamental

Keys: Primary *orid/sta/phase*

Data: Descriptive *sta, phase, rectype*  
 Measurement *complexity, snr*  
 Administrative *Iddate*

**▼ S/H/I Table Descriptions****DATADAYS**

The **datadays** table contains the days and times for which analysis has been completed.

**TABLE 21: DATADAYS**

Column	Storage Type	Description
1 <i>jdate</i>	number(8)	Julian date
2 <i>time</i>	float(53)	epoch time of start of dataday
3 <i>endtime</i>	float(53)	epoch time of end of dataday
4 <i>lenddate</i>	date	load date

Category: Interactive Processing

Keys: Primary *jdate*

Data: Measurement *jdate, time, endtime*  
Administrative *lenddate*

## DATAREADY

The **dataready** table indicates which data are ready to be processed by the *Subscription Subsystem*. Entries to the table are made by scripts running in the operational systems that process the data.

**TABLE 22: DATAREADY**

Column	Storage Type	Description
1 <i>dataid</i>	number(8)	data ready identifier
2 <i>tablename</i>	varchar2(24)	name of table
3 <i>account</i>	varchar2(24)	account name
4 <i>tagname</i>	varchar2(12)	name of reference field (for example, <i>orid</i> )
5 <i>tagid</i>	number(10)	value of tag name
6 <i>tagid2</i>	number(10)	secondary tag value
7 <i>data_info</i>	varchar2(24)	miscellaneous data information
8 <i>status</i>	varchar2(8)	status of new entry (i=insert, c=change, d=delete)
9 <i>lenddate</i>	date	load date

Category: Data Services

Keys: Primary *dataid*

Data: Descriptive *tablename, account, tagname, data\_info, status*  
 Measurement *tagid, tagid2*  
 Administrative *lenddate*

▼ **S/H/I Table Descriptions**

## DATAUSER

The **datauser** table tracks authorized users of the *Message* and *Subscription Subsystems*. Each user is identified by a (unique) *username* and *domain*, which must match all email headers. The *priority* column specifies the class of user, and *servicetime* is the last time a request from the user was processed. *Priority* and *servicetime* are considered when selecting the order in which requests will be processed. The *status* can either be active or inactive.

**TABLE 23: DATAUSER**

Column	Storage Type	Description
1 <i>userid</i>	number(8)	identifier for the user
2 <i>pocid</i>	number(8)	point of contact identifier
3 <i>username</i>	varchar2(24)	user name from the incoming subscription message
4 <i>domain</i>	varchar2(48)	domain name from the incoming subscription message
5 <i>msgtype</i>	varchar2(16)	message type
6 <i>status</i>	varchar2(24)	status of this user
7 <i>priority</i>	number(2)	user's priority
8 <i>commid</i>	number(8)	comment identifier
9 <i>emaillimit</i>	number(8)	maximum size of message (in bytes) that will be delivered via email
10 <i>servicetime</i>	float(53)	last time a request from that user was serviced
11 <i>lenddate</i>	date	load date

Category: Data Services

Keys:	Primary	<i>userid</i>
	Foreign	<i>pocid, commid</i>
Data:	Descriptive	<i>username, domain, msgtype, emaillimit</i>
	Measurement	<i>status, priority, servicetime</i>
	Administrative	<i>ldate</i>

## ▼ S/H/I Table Descriptions

**DETECTION**

The **detection** table contains summary information about S/H/I detections.

**TABLE 24: DETECTION**

Column	Storage Type	Description
1 <i>arid</i>	number(8)	arrival identifier
2 <i>jdate</i>	number(8)	Julian date
3 <i>time</i>	float(53)	epoch time
4 <i>sta</i>	varchar2(6)	station code
5 <i>chan</i>	varchar2(8)	channel code
6 <i>bmtyp</i>	varchar2(4)	beam type
7 <i>sproid</i>	number(8)	signal processor identifier
8 <i>cfreq</i>	float(24)	center frequency
9 <i>seaz</i>	float(24)	observed azimuth
10 <i>delaz</i>	float(24)	azimuth uncertainty
11 <i>slow</i>	float(24)	observed slowness, sec/km
12 <i>delslo</i>	float(24)	slowness uncertainty
13 <i>snr</i>	float(24)	signal-to-noise ratio
14 <i>stav</i>	float(24)	short-term average
15 <i>fstat</i>	float(24)	f-statistic
16 <i>deltim</i>	float(24)	time uncertainty
17 <i>bandw</i>	float(24)	bandwidth
18 <i>fkqual</i>	number(4)	f-k quality
19 <i>commid</i>	number(8)	comment identifier
20 <i>lenddate</i>	date	load date

Category: Fundamental

Keys: Primary *sta/time*  
Alternate *arid*  
Foreign *commid*

Data: Descriptive *sta, chan, brntyp, sproid*  
Measurement *jdate, time, cfreq, seaz, delaz, slow, delslo, snr, stav,*  
*fstat, deltim, bandw, fkqual*  
Administrative *Iddate*

## ▼ S/H/I Table Descriptions

**DISCARD**

The **discard** table contains the reason why an analyst discarded an event that was hypothesized by the automated system.

**TABLE 25: DISCARD**

Column	Storage Type	Description
1 <i>evid</i>	number(8)	event identifier
2 <i>reason</i>	varchar2(30)	reason event was discarded
3 <i>auth</i>	varchar2(15)	source/originator
4 <i>lenddate</i>	date	load date

Category: Interactive Processing

Keys: Primary *evid*

Data: Descriptive *reason, auth*  
Administrative *lenddate*

**DLFILE**

The **dlfile** table describes the files used in the diskloops managed by the *DLMan* application.

**TABLE 26: DLFILE**

<b>Column</b>	<b>Storage Type</b>	<b>Description</b>
1 <i>dir</i>	varchar2(64)	directory name
2 <i>dfile</i>	varchar2(32)	filename
3 <i>machine</i>	varchar2(32)	machine name
4 <i>partition</i>	varchar2(64)	disk partition name
5 <i>dfid</i>	number(8)	diskloop file identifier
6 <i>inloop</i>	varchar2(1)	file is part of a diskloop = y/n
7 <i>full</i>	varchar2(1)	file is full = y/n
8 <i>archived</i>	varchar2(1)	file is archived = y/n/a
9 <i>length</i>	number(10)	length of file, bytes
10 <i>tlen</i>	float(24)	length of file, seconds
11 <i>time</i>	float(53)	start time
12 <i>reaptime</i>	float(53)	clock time for expiration
13 <i>sta</i>	varchar2(6)	station name
14 <i>chan</i>	varchar2(8)	channel name
15 <i>chanid</i>	number(8)	channel identifier
16 <i>dlid</i>	number(8)	diskloop manager identifier
17 <i>commid</i>	number(8)	comment identifier
18 <i>Iddate</i>	date	load date

**▼ S/H/I Table Descriptions**

Category: Data Services

Keys: Primary      *dir/dfile*  
         Alternate    *dfid*  
         Foreign     *chanid, dlid, commid*

Data: Descriptive    *dir, dfile, machine, partition, inloop, full, archived,*  
                      *length, tlen, time, sta, chan*  
                      *reaptime, ldate*

**DLMAN**

The **dliman** table keeps track of currently running *DLMAn* instances. *Machine* is the host on which this *dlid* runs (it may not run elsewhere). “Running” indicates whether that *DLMAn* is currently operational. The table also provides the ports this *dlid* is currently using to listen to other processes.

**TABLE 27: DLMAN**

<b>Column</b>	<b>Storage Type</b>	<b>Description</b>
1 <i>dlid</i>	number(8)	diskloop manager identifier
2 <i>machine</i>	varchar2(32)	machine name
3 <i>running</i>	varchar2(1)	<i>DLMAn</i> running = y/n
4 <i>connmanport</i>	number(6)	<i>ConnMan</i> port
5 <i>controlport</i>	number(6)	DataControl port
6 <i>archiveport</i>	number(6)	Archiver port
7 <i>forwardport</i>	number(6)	Forwarder port
8 <i>commid</i>	number(8)	comment identifier
9 <i>lddate</i>	date	load date

Category: Data Services

Keys: Primary *dlid*  
Foreign *commid*

Data: Descriptive *machine, running, connmanport, controlport, archiveport, forwardport*  
Administrative *lddate*

▼ S/H/I Table Descriptions

## EV\_SUMMARY, EX\_SUMMARY, AN\_SUMMARY

The `ev_summary`, `ex_summary`, and `an_summary` tables contain statistical summary analysis of expert system solutions from the *ExAnComp* application.

**TABLE 28: EV\_SUMMARY (EX\_SUMMARY, AN\_SUMMARY)**

Column	Storage Type	Description
1 <code>orid</code>	number(8)	origin identifier of analyst event
2 <code>nearsta</code>	varchar2(6)	code for nearest station
3 <code>neardist</code>	float(24)	distance to closest station
4 <code>nearaz</code>	float(24)	azimuth from nearest station
5 <code>refid</code>	number(8)	identifier of nearest reference point
6 <code>refdist</code>	float(24)	distance to nearest reference point
7 <code>refaz</code>	float(24)	azimuth to nearest reference point
8 <code>grn</code>	number(8)	geographic region number
9 <code>nsta</code>	number(8)	number of recording stations
10 <code>lsta</code>	number(8)	number of local observations
11 <code>asta</code>	number(8)	number of regional array observations
12 <code>rsta</code>	number(8)	number of non-array regional observations
13 <code>tsta</code>	number(8)	number of teleseismic observations
14 <code>ndef</code>	number(8)	number of time-defining phases
15 <code>adef</code>	number(8)	number of associated nondefining phases
16 <code>primp</code>	number(8)	number of primary time-defining phases used for location

**TABLE 28: EV\_SUMMARY (EX\_SUMMARY, AN\_SUMMARY) (CONTINUED)**

Column	Storage Type	Description
17 <i>secondp</i>	number(8)	number of secondary phases used for location
18 <i>depthp</i>	number(8)	number of depth phases
19 <i>lenddate</i>	date	load date

Category: System Monitoring

Keys: Primary      *orid*  
          Foreign      *grn, refid*

Data: Descriptive      *nearsta, grn*  
       Measurement      *neardist, nearaz, refdist, refaz, nsta, lsta, asta, rsta, tsta, ndef, adef, primp, secondp, depthp*  
       Administrative      *lenddate*

▼ **S/H/I Table Descriptions**

## EVENT

The **event** table contains a list of events. Multiple origins may be defined for any one event. *Prefor* points to the preferred origin.

**TABLE 29: EVENT**

Column	Storage Type	Description
1 <i>evid</i>	number(8)	event identifier
2 <i>evname</i>	varchar2(15)	event name
3 <i>prefor</i>	number(8)	preferred origin
4 <i>auth</i>	varchar2(15)	source/originator
5 <i>commid</i>	number(8)	comment identifier
6 <i>Iddate</i>	date	load date

Category: Core, Fundamental

Keys: Primary      *evid*  
          Foreign      *prefor, commid*

Data: Descriptive      *evname, preför*  
          Administrative      *auth, Iddate*

## EVENT\_CONTROL, IN\_EVENT\_CONTROL

The `event_control` and `in_event_control` tables contain event location and magnitude control parameters. This information acts as an archive of the specific user-defined controls that were used to determine the location and magnitude of a given `orid`. The table also includes two measurement columns (`cov_sm_axes` and `cov_depth_time`) that allow the coverage ellipse to be determined from the confidence ellipse axes.

**TABLE 30: EVENT\_CONTROL (IN\_EVENT\_CONTROL)**

Column	Storage Type	Description
1 <code>orid</code>	number(8)	origin identification
2 <code>evid</code>	number(8)	event identification
3 <code>prefer_loc</code>	varchar2(1)	preferred location identifier (S, F, R)
4 <code>constrain_ot</code>	number(1)	flag to constrain origin time
5 <code>constrain_latlon</code>	number(1)	flag to constrain latitude/longitude
6 <code>constrain_depth</code>	number(1)	flag to constrain depth
7 <code>src_dpnt_corr</code>	number(2)	source-dependent correction code
8 <code>loc_src_dpnt_reg</code>	varchar2(15)	region name of source-dependent location correction
9 <code>loc_sdv_screen</code>	number(1)	flag to ignore large data residuals in location
10 <code>loc_sdv_mult</code>	float(24)	location large residual multiplier factor
11 <code>loc_alpha_only</code>	number(1)	flag to use only primary stations in location
12 <code>loc_all_stas</code>	number(1)	flag to use only stations with <code>src_dpnt_corr</code>
13 <code>loc_dist_varwgt</code>	number(1)	flag to use distance variance weighting

## ▼ S/H/I Table Descriptions

**TABLE 30: EVENT\_CONTROL (IN\_EVENT\_CONTROL) (CONTINUED)**

<b>Column</b>	<b>Storage Type</b>	<b>Description</b>
14 <i>mag_src_dpnt_reg</i>	varchar2(15)	region name of source-dependent magnitude correction
15 <i>mag_sdv_screen</i>	number(1)	flag to ignore large magnitude data residuals
16 <i>mag_sdv_mult</i>	float(24)	magnitude large residual multiplier factor
17 <i>mag_alpha_only</i>	number(1)	flag to limit station net used in magnitude
18 <i>mag_all_stas</i>	number(1)	flag to use only primary stations in magnitude
19 <i>mb_min_dist</i>	float(24)	minimum distance (degrees) for $m_b$
20 <i>mb_max_dist</i>	float(24)	maximum distance (degrees) for $m_b$
21 <i>mmodel</i>	varchar2(15)	network magnitude model
22 <i>cov_sm_axes</i>	float(24)	coverage ellipse semi-axes conversion factor
23 <i>cov_depth_time</i>	float(24)	coverage ellipse depth/time conversion factor
24 <i>lddate</i>	date	load date

Category: Automatic Processing

Keys: Primary      *evid/orid*Data: Descriptive      *prefer\_loc, constrain\_ot, constrain\_latlon, constrain\_depth, src\_dpnt\_corr, loc\_src\_dpnt\_reg, loc\_sdv\_screen, loc\_sdv\_mult, loc\_alpha\_only, loc\_all\_stas, loc\_dist\_varwgt, mag\_src\_dpnt\_reg, mag\_sdv\_screen, mag\_sdv\_mult, mag\_alpha\_only, mag\_all\_stas, mb\_min\_dist, mb\_max\_dist, mmodel cov\_sm\_axes, cov\_depth\_time lddate*Measurement  
Administrative

**EVSC\_HYDRO**

The **evsc\_hydro** table contains station-specific hydroacoustic event-screening results for the standard and subscription criteria. One record per *orid* per *sta* is in the table.

**TABLE 31: Evsc\_Hydro**

Column	Storage Type	Description
1 <i>orid</i>	number(8)	origin identifier
2 <i>sta</i>	varchar2(6)	station code
3 <i>cp_broad_band</i>	float(24)	hydroacoustic cepstral peak amplitude in 2–80 Hz band
4 <i>snr_high_band</i>	float(24)	hydroacoustic signal-to-noise ratio in 32–64 Hz band
5 <i>noise_high_band</i>	float(24)	hydroacoustic noise level in 32–64 Hz band
6 <i>ldate</i>	date	load date

Category: Automatic Processing

Keys: Primary      *orid/sta*

Data: Measurement      *cp\_broad\_band, snr\_high\_band, noise\_high\_band*  
           Administrative      *ldate*

▼ S/H/I Table Descriptions

## EVSC\_PROD

The **evsc\_prod** table contains event screening results for the standard and subscription criteria. One record per *orid* is in the table for each subscription (*prodid*).

**TABLE 32: EVSC\_PROD**

Column	Storage Type	Description
1 <i>prodid</i>	number(8)	product identifier
2 <i>orid</i>	number(8)	origin identifier
3 <i>score</i>	float(24)	composite screening score
4 <i>dscore</i>	float(24)	depth screening score
5 <i>mscore</i>	float(24)	$m_b$ minus $M_s$ screening score
6 <i>rscore</i>	float(24)	regional P/S screening score
7 <i>hscore</i>	float(24)	hydroacoustic screening score
8 <i>depth</i>	float(24)	depth estimate
9 <i>deptherr</i>	float(24)	depth confidence interval
10 <i>moveout_pp</i>	float(24)	moveout of pP–P travel times
11 <i>moveout_sp</i>	float(24)	moveout of sP–P travel times
12 <i>min_dt_pp</i>	float(24)	pP–P travel time difference at nearest station beyond 25 deg.
13 <i>min_dt_sp</i>	float(24)	sP–P travel time difference at nearest station beyond 25 deg.
14 <i>ndp_snr_pp</i>	number(8)	number of pP phases with sufficient snr for moveout processing
15 <i>ndp_snr_sp</i>	number(8)	number of sP phases with sufficient snr for moveout processing
16 <i>mbms</i>	float(24)	$m_b$ minus $M_s$ (including slope term)
17 <i>mbmserr</i>	float(24)	$m_b$ minus $M_s$ confidence interval
18 <i>mb</i>	float(24)	$m_b$ magnitude used for event screening
19 <i>ms</i>	float(24)	$M_s$ magnitude used for event screening

**TABLE 32: EVSC\_PROD (CONTINUED)**

Column	Storage Type	Description
20 <i>nsta_mb</i>	number(8)	number of stations used in network $m_b$ estimate
21 <i>nsta_ms</i>	number(8)	number of stations used in network $M_s$ estimate
22 <i>smaj_sc</i>	float(24)	scaled semi-major axis of location error ellipse
23 <i>smin_sc</i>	float(24)	scaled semi-minor axis of location error ellipse
24 <i>strike</i>	float(24)	strike angle of location error ellipse
25 <i>pctoffsh</i>	float(24)	percent of location error ellipse that is offshore
26 <i>min_wdepth</i>	float(24)	minimum water depth within location error ellipse
27 <i>clrpth</i>	number(1)	indicator of clear path to at least one hydro-acoustic station
28 <i>consider</i>	number(1)	considered for event screening flag
29 <i>Iddate</i>	date	load date

Category: Fundamental

Keys: Primary      *prodid/orid*

Data: Descriptive      *consider*  
 Convenience      *mb, ms, strike, depth, nsta\_mb, nsta\_ms*  
 Measurement      *score, dscore, mscore, rscore, hscore, deptherr,*  
*moveout\_pp, moveout\_sp, min\_dt\_pp, min\_dt\_sp,*  
*ndp\_snr\_pp, ndp\_snr\_sp, mbms, mbmserr, smaj\_sc,*  
*smin\_sc, pctoffsh, min\_wdepth, clrpth*

Administrative      *Iddate*

▼ **S/H/I Table Descriptions**

## **EVSC\_REGIONAL**

The **evsc Regional** table contains station-specific regional seismic phase amplitude measurements and quality flags for the standard and subscription criteria. One record per *orid* per *sta* is in the table.

**TABLE 33: EVSC\_REGIONAL**

Column	Storage Type	Description
1 <i>orid</i>	number(8)	origin identifier
2 <i>sta</i>	varchar2(6)	station name
3 <i>chan</i>	varchar2(8)	channel identifier
4 <i>delta</i>	float(24)	source-receiver distance
5 <i>pnsmax</i>	float(24)	maximum of Pn/Sn and Pn/Lg
6 <i>pnsmax_corr</i>	float(24)	amplitude ratio correction term
7 <i>pnsmax_err</i>	float(24)	amplitude ratio error term
8 <i>pnsn</i>	float(24)	Pn/Sn amplitude ratio
9 <i>pnlg</i>	float(24)	Pn/Lg amplitude ratio
10 <i>pn_snr</i>	float(24)	Pn amplitude snr ratio
11 <i>sn_snr</i>	float(24)	Sn amplitude snr ratio
12 <i>lg_snr</i>	float(24)	Lg amplitude snr ratio
13 <i>pnsn_qual</i>	varchar2(10)	Pn/Sn amplitude ratio quality flags
14 <i>pnlg_qual</i>	varchar2(10)	Pn/Lg amplitude ratio quality flags
15 <i>lddate</i>	date	load date

Category: Fundamental

Keys: Primary *orid/sta/chan*

Data: Descriptive *pnsn\_qual, pnlg\_qual*  
Convenience *delta*  
Measurement *pnsmax, pnsmax\_corr, pnsmax\_err, pnsn, pnlg,*  
Administrative *pn\_snr, sn\_snr, lg\_snr*  
*ldate*

## ▼ S/H/I Table Descriptions

**EX\_AN**

The **ex\_an** table contains analyses of expert system solutions compared to analyst solutions from the *ExAnComp* application.

**TABLE 34: EX\_AN**

Column	Storage Type	Description
1 <i>forid</i>	number(8)	final origin identifier
2 <i>eorid</i>	number(8)	expert system origin identifier
3 <i>ddist</i>	float(24)	distance between <i>forid</i> and <i>eorid</i>
4 <i>ddepth</i>	float(24)	depth difference
5 <i>dtime</i>	float(24)	origin time difference
6 <i>did</i>	varchar2(4)	identification difference
7 <i>dnsta</i>	number(8)	difference in recording stations
8 <i>dlsta</i>	number(8)	difference in local stations
9 <i>dasta</i>	number(8)	difference in regional array stations
10 <i>drsta</i>	number(8)	difference in non-array regional station
11 <i>dtsta</i>	number(8)	difference in teleseismic station
12 <i>dndef</i>	number(8)	difference in defining phases
13 <i>dprimp</i>	number(8)	difference in primary phases
14 <i>dsecondp</i>	number(8)	difference in secondary phases
15 <i>ddepthp</i>	number(8)	difference in depth phases
16 <i>rprimp</i>	number(8)	renamed primary phases
17 <i>rsecondp</i>	number(8)	renamed secondary phases
18 <i>rdepthp</i>	number(8)	renamed depth phases
19 <i>added</i>	number(8)	number of added phases
20 <i>retime</i>	number(8)	number of retimed phases
21 <i>splitev</i>	varchar2(4)	split event (y/n)

**TABLE 34: EX\_AN (CONTINUED)**

Column	Storage Type	Description
22 <i>multev</i>	varchar2(4)	multiple events (y/n)
23 <i>kbscause</i>	varchar2(7)	knowledge system explanation
24 <i>lddate</i>	date	load date

Category: System Monitoring

Keys: Primary      *forid*  
          Foreign      *eorid*

Data:      Measurement      *ddist, ddepth, dtime, did, dnsta, dlsta, dasta, drsta,*  
                                   *dtsta, dndef, dprimp, dsecondp, ddepthp, rprimp,*  
                                   *rsecondp, rdepthp, added, retime, splitev, multev,*  
                                   *kbscause*  
                                   *lddate*

Administrative

▼ **S/H/I Table Descriptions**

## **EXCEPTION\_CHANMAP**

The **exception\_chanmap** table contains exception channel mappings for specific stations.

**TABLE 35: EXCEPTION\_CHANMAP**

Column	Storage Type	Description
1 <i>sta</i>	varchar2(6)	station code
2 <i>ext_chan</i>	varchar2(8)	external channel name
3 <i>int_chan</i>	varchar2(8)	internal channel name
4 <i>ondate</i>	number(8)	Julian start date
5 <i>offdate</i>	number(8)	Julian off date
6 <i>lenddate</i>	date	load date

Category: Data Services

Keys:	Primary. Foreign.	<i>sta, ext_chan</i> <i>int_chan</i>
Data:	Descriptive Measurement Administrative	<i>sta, ext_chan, int_chan</i> <i>ondate, offdate</i> <i>lenddate</i>

**EXPLO**

The **explo** table contains information on explosions.

**TABLE 36: EXPLO**

Column	Storage Type	Description
1 <i>orid</i>	number(8)	origin identifier
2 <i>evid</i>	number(8)	event identifier
3 <i>name</i>	varchar2(32)	shot name
4 <i>elev</i>	float(24)	surface elevation (km)
5 <i>yield</i>	float(24)	yield (kT)
6 <i>yldmax</i>	float(24)	upper limit of yield range
7 <i>medium</i>	varchar2(48)	shot medium
8 <i>moist</i>	float(24)	moisture content
9 <i>waterdepth</i>	float(24)	depth of static water table (km)
10 <i>paleodepth</i>	float(24)	depth of Paleozoic layer (km)
11 <i>col_interval</i>	float(24)	collapse interval (seconds)
12 <i>col_diameter</i>	float(24)	collapse diameter (km)
13 <i>col_depth</i>	float(24)	collapse depth (km)
14 <i>col_volume</i>	float(24)	collapse volume (km <sup>3</sup> )
15 <i>testsite</i>	varchar2(15)	test site name
16 <i>expcode</i>	varchar2(10)	explosion type code
17 <i>exptype</i>	varchar2(15)	explosion type
18 <i>locid</i>	varchar2(30)	location identification code
19 <i>auth</i>	varchar2(15)	author
20 <i>commid</i>	number(8)	comment identifier
21 <i>Iddate</i>	date	load date

**▼ S/H/I Table Descriptions**

Category: Historical

Keys: Primary      *orid*  
Foreign      *evid, locid, commid*

Data: Descriptive      *name, medium, testsite, expcode, exptype*  
Measurement      *elev, yield, yldmax, moist, waterdepth, paleodepth,*  
Administrative      *col\_interval, col\_diameter, col\_depth, col\_volume*  
                        *auth, lddate*

**FILEPRODUCT, FS\_STAGEPRODUCT**

The **fileproduct** table contains descriptions of files containing products.

**TABLE 37: FILEPRODUCT (FS\_STAGEPRODUCT)**

Column	Storage Type	Description
1 <i>fpid</i>	number(8)	file product identifier
2 <i>typeid</i>	number(8)	identifier for the product type
3 <i>dir</i>	varchar2(64)	directory where the file is stored
4 <i>dfile</i>	varchar2(32)	filename containing the file product
5 <i>foff</i>	number(10)	file offset (in bytes) where the data begins
6 <i>dsize</i>	number(10)	size of the data (in bytes)
7 <i>time</i>	float(53)	beginning time of the data
8 <i>endtime</i>	float(53)	end time of the data
9 <i>sta</i>	varchar2(6)	station code
10 <i>chan</i>	varchar2(8)	channel code
11 <i>author</i>	varchar2(16)	author of the file product
12 <i>version</i>	float(53)	version of the author
13 <i>revision</i>	number(4)	revision number of the file product
14 <i>obsolete</i>	number(1)	flag to indicate if the data are obsolete
15 <i>ldate</i>	date	load date

Category: Data Services

Keys: Primary *fpid*  
Foreign *typeid*

Data: Descriptive *dir, dfile, foff, dsize, time, endtime, sta, chan, author, version, revision, obsolete*  
Administrative *ldate*

▼ **S/H/I Table Descriptions**

## **FKDISC**

The **fkdisc** table contains descriptions of frequency-wave number (.fk) files.

**TABLE 38: FKDISC**

Column	Storage Type	Description
1 <i>jdate</i>	number(8)	Julian date
2 <i>time</i>	float(53)	epoch time
3 <i>tlen</i>	float(24)	time window
4 <i>sta</i>	varchar2(6)	station code
5 <i>fktyp</i>	varchar2(4)	f-k type
6 <i>arid</i>	number(8)	arrival identifier
7 <i>maxkx</i>	float(24)	maximum x-wavenumber
8 <i>maxsx</i>	float(24)	maximum x-slowness
9 <i>nx</i>	number(4)	number of x-samples
10 <i>maxky</i>	float(24)	maximum y-wavenumber
11 <i>maxsy</i>	float(24)	maximum y-slowness
12 <i>ny</i>	number(4)	number of y-samples
13 <i>cfreq</i>	float(24)	center frequency
14 <i>bandw</i>	float(24)	bandwidth
15 <i>commid</i>	number(8)	comment identifier
16 <i>fkrid</i>	number(8)	f-k recipe identifier
17 <i>fkid</i>	number(8)	f-k identifier
18 <i>datsw</i>	number(10)	data switch
19 <i>foff</i>	number(10)	byte offset of data segment within file
20 <i>dir</i>	varchar2(64)	f-k directory
21 <i>dfile</i>	varchar2(32)	f-k data file
22 <i>ldate</i>	date	load date

Category: Interactive Processing

Keys: Primary *fkid*  
Alternate *arid*  
Foreign *commid*

Data: Descriptive *sta, datsw, foff, dir, dfile*  
Measurement *jdate, time, tlen, fktyp, maxkx, maxsx, nx, maxky,*  
*maxsy, ny, cfreq, bandw*  
Administrative *fkrid, lddate*

**▼ S/H/I Table Descriptions****FORBEAMAUX**

The **forbeamaux** table contains the channels for which amplitude measurements in the event lists and bulletins have been made.

**TABLE 39: FORBEAMAUX**

Column	Storage Type	Description
1 <i>sta</i>	varchar2(6)	station code
2 <i>chan</i>	varchar2(8)	channel code

Category: Data Services

Keys: Primary *sta/chan*

Data: Descriptive *sta, chan*

## FPDESCRIPTION

The **fpdescription** table contains descriptions of product types used with file products.

**TABLE 40: FPDESCRIPTION**

Column	Storage Type	Description
1 <i>typeid</i>	number(8)	identifier for the product type description
2 <i>prodtype</i>	varchar2(12)	name of the product (should be the same as the protocol defining name)
3 <i>name</i>	varchar2(64)	descriptive listing of the product name
4 <i>msgdtype</i>	varchar2(16)	type of data (ASCII <sup>1</sup> , GIF89, and so on)
5 <i>msgdformat</i>	varchar2(16)	format of the data (GSE2.0, RMS1.0, and so on).
6 <i>header_fpid</i>	number(8)	<i>fpid</i> pointing to the header row for this product type
7 <i>lddate</i>	date	load date

1. American Standard Code for Information Interchange

Category: Data Services

Keys: Primary      *typeid*

Data: Descriptive      *prodtype, name, msgdtype, msgdformat, header\_fpid*  
Administrative      *lddate*

▼ **S/H/I Table Descriptions**

## FSAVE

The **fsave** table contains descriptions of an averaged Fourier spectrum (.fs) file.

**TABLE 41: FSAVE**

Column	Storage Type	Description
1 <i>sta</i>	varchar2(6)	station code
2 <i>avtype</i>	varchar2(8)	Fourier spectrum channel (ave, med, 95 percent, and so on)
3 <i>fstype</i>	varchar2(4)	Fourier spectrum type
4 <i>maxf</i>	float(24)	maximum frequency
5 <i>nf</i>	number(8)	number of frequency values
6 <i>nave</i>	number(4)	number of spectrums averaged
7 <i>afsid</i>	number(8)	averaged Fourier spectrum identifier
8 <i>noissd</i>	float(24)	standard deviation of log noise
9 <i>datatype</i>	varchar2(2)	numeric storage
10 <i>dir</i>	varchar2(64)	Fourier spectrum directory
11 <i>dfile</i>	varchar2(32)	Fourier spectrum data file
12 <i>foff</i>	number(10)	byte offset of data within file
13 <i>commid</i>	number(8)	comment identifier
14 <i>ldate</i>	date	load date

Category: Interactive Processing

Keys: Primary *afsid*  
          Alternate *avtype/fstype/sta*  
          Foreign *commid*

Data: Descriptive *sta, avtype, fstype, datatype, dir, dfile, foff*  
          Measurement *maxf, nave, nf, noissd*  
          Administrative *ldate*

**FSDISC**

The **fsdisc** table contains descriptions of a Fourier spectrum (.fs) file.

**TABLE 42: FSDISC**

Column	Storage Type	Description
1 <i>fsid</i>	number(8)	Fourier spectrum identifier
2 <i>chanid</i>	number(8)	channel identifier
3 <i>wfid</i>	number(8)	waveform identifier
4 <i>fsrid</i>	number(8)	fs recipe identifier
5 <i>arid</i>	number(8)	arrival identifier
6 <i>jdate</i>	number(8)	Julian date
7 <i>time</i>	float(53)	epoch time
8 <i>tlen</i>	float(24)	time window
9 <i>sta</i>	varchar2(6)	station code
10 <i>chan</i>	varchar2(8)	channel code
11 <i>fstype</i>	varchar2(4)	Fourier spectrum type
12 <i>maxf</i>	float(24)	maximum frequency
13 <i>nf</i>	number(8)	number of frequency values
14 <i>datatype</i>	varchar2(2)	numeric storage
15 <i>dir</i>	varchar2(64)	Fourier spectrum directory
16 <i>dfile</i>	varchar2(32)	Fourier spectrum data file
17 <i>foff</i>	number(8)	byte offset of data segment within file
18 <i>commid</i>	number(8)	comment identifier
19 <i>ldate</i>	date	load date

**▼ S/H/I Table Descriptions**

Category: Interactive Processing

Keys: Primary            *fsid*  
          Foreign         *chanid, wfid, fsrid, arid, commid*

Data: Descriptive        *sta, chan, datatype, dir, dfile, fooff*  
          Measurement    *jdate, time, tlen, fstyp, maxf, nf*  
          Administrative *lddate*

**FSRECIPE**

The **fsrecipe** table contains recipe descriptions for generating Fourier spectrum (.fs) files.

**TABLE 43: FSRECIPE**

Column	Storage Type	Description
1 <i>fsrid</i>	number(8)	recipe identification
2 <i>fsdesc</i>	varchar2(15)	Fourier spectrum description
3 <i>taper</i>	varchar2(8)	type of taper (Hanning, Hamming, Cosine, and so on)
4 <i>taperstart</i>	number(8)	starting percent for cosine taper
5 <i>taperend</i>	number(8)	end percent for cosine taper
6 <i>winlen</i>	number(8)	number of points per window
7 <i>overlap</i>	number(8)	percent overlap of windows
8 <i>nfft</i>	number(8)	number of data points in the fft
9 <i>smoothvalue</i>	float(24)	amount of smoothing (Hz)
10 <i>response</i>	varchar2(1)	flag specifying instrument response correction
11 <i>lddate</i>	date	load date

Category: Interactive Processing

Keys: Primary      *fsrid*

Data: Descriptive      *fsdesc, taper, taperstart, taperend, winlen, overlap, nfft, smoothvalue, response*  
           Administrative      *lddate*

**▼ S/H/I Table Descriptions****FSTAG**

The **fstag** table links individual spectrum files to the average spectrum file.

**TABLE 44: FSTAG**

Column	Storage Type	Description
1 <i>afsid</i>	number(8)	average Fourier spectra recipe identification
2 <i>fsid</i>	number(8)	Fourier spectrum identification
3 <i>lenddate</i>	date	load date

Category: Interactive Processing

Keys: Primary      *afsid/fsid*

Data: Administrative      *lenddate*

**FTPFAILED**

The **ftpfailed** table contains information on FTP data retrieval for *AutoDRM*.

**TABLE 45: FTPFAILED**

Column	Storage Type	Description
1 <i>msgid</i>	number(8)	message identifier
2 <i>numfailedattempt</i>	number(4)	number of failed attempts
3 <i>lastfailedtime</i>	float(53)	time of most recent attempt
4 <i>ftp_address</i>	varchar2(64)	FTP address
5 <i>status</i>	varchar2(8)	status of FTP attempt ( <i>retry</i> or <i>failed</i> )
6 <i>lenddate</i>	date	load date

Category: Data Services

Keys: Primary      *msgid*  
          Foreign      *ftp\_address*

Data: Descriptive      *status, ftp-address*  
       Measurement      *numfailedattempt, lastfailedtime*  
       Administrative      *lenddate*

**▼ S/H/I Table Descriptions****FTPLOGIN**

The **ftplogin** table contains log on information for FTP data retrieval. The rows are used by the auxiliary data retrieval system to obtain data via FTP from auxiliary stations.

**TABLE 46: FTPLOGIN**

Column	Storage Type	Description
1 <i>ftp_address</i>	varchar2(64)	FTP address for auxiliary data
2 <i>username</i>	varchar2(16)	user name for FTP access
3 <i>password</i>	varchar2(16)	user password for FTP access
4 <i>lenddate</i>	date	load date

Category: Data Services

Keys: Primary *ftp\_address*

Data: Descriptive *ftp\_address, username, password*  
Administrative *lenddate*

## FWFILE

The **fwfile** table contains file information used for buffering continuous data. An entry in this table describes the source station (*sta*) and the destination (*ndc*) for a particular stream of continuous data. A one-to-one relationship exists between a source station and a destination station. *Fwhid* and *fwdid* designate the identifiers (IDs) of the *AlphaDLHeap* and *AlphaForward* processes that service this file. This table is configured by an operator, and the IDs are specified as parameters to the *AlphaDLHeap* and *AlphaForward* applications. *Maxtime* designates the maximum time that a gap in the data can span for a given station.

**TABLE 47: FWFILE**

Column	Storage Type	Description
1 <i>fwhid</i>	number(8)	identifier of the <i>AlphaDLHeap</i> process
2 <i>fwdid</i>	number(8)	identifier of the <i>AlphaForward</i> process
3 <i>ndc</i>	varchar2(6)	destination of the forwarded data
4 <i>sta</i>	varchar2(6)	station code
5 <i>maxtime</i>	float(53)	greatest time period for a gap
6 <i>dir</i>	varchar2(64)	directory name
7 <i>dfile</i>	varchar2(32)	heap filename
8 <i>df filesize</i>	number(9)	buffer file size
9 <i>Iddate</i>	date	load date

Category: Data Services

Keys: Primary *sta/ndc*

Data: Descriptive *ndc, sta, fwdid, fwhid, dir, dfile, df filesize*  
 Measurement *maxtime*  
 Administrative *Iddate*

▼ **S/H/I Table Descriptions**

## FWGAP

The **fwgap** table was used for tracking gaps in continuous data. Gap management is now handled by the continuous data subsystem but the table is still required by the Message Subsystem software.

**TABLE 48: FWGAP**

Column	Storage Type	Description
1 <i>sta</i>	varchar2(6)	station code
2 <i>chan</i>	varchar2(8)	channel code
3 <i>ndc</i>	varchar2(6)	destination of the forwarded data
4 <i>time</i>	float(53)	start time of gap
5 <i>fwgid</i>	number(8)	forward gap identifier
6 <i>endtime</i>	float(53)	end time of gap
7 <i>framesize</i>	float(53)	delta time of data frame
8 <i>lenddate</i>	date	load date

Category: Data Services

Keys:	Primary	<i>fwgid</i>
	Alternate	<i>sta/chan/ndc</i>
Data:	Descriptive	<i>sta, chan, ndc</i>
	Measurement	<i>time, endtime, framesize</i>
	Administrative	<i>lenddate</i>

## FWSITE

The **fwsite** table contains the possible destinations for forwarding data. An entry in this table describes the destination of the data (*ndc*), the fully qualified domain name of the machine where the connection manager resides (*machine*), and the port on which the connection manager is listening (*port*).

**TABLE 49: FWSITE**

Column	Storage Type	Description
1 <i>ndc</i>	varchar2(6)	destination of the forwarded data
2 <i>machine</i>	varchar2(32)	machine name
3 <i>port</i>	number(6)	listen port
4 <i>priority</i>	number(2)	priority of connection
5 <i>Iddate</i>	date	load date

Category: Data Services

Keys: Primary      *ndc/priority*

Data: Descriptive      *ndc, machine, port, priority*  
Administrative      *Iddate*

**▼ S/H/I Table Descriptions****GA\_TAG**

The **ga\_tag** table contains information on the use of arrivals and origins in the GA application.

**TABLE 50: GA\_TAG**

Column	Storage Type	Description
1 <i>objtype</i>	varchar2(1)	type of identifier (a for arrival, o for origin)
2 <i>id</i>	number(8)	identification number ( <i>arid</i> or <i>orid</i> )
3 <i>state</i>	varchar2(20)	use of <i>arid</i> or <i>orid</i>

Category: Automatic Processing

Keys: Primary      *objtype/id/state*

Data: Descriptive      *objtype*  
Measurement      *state*

## GLOSSARY

The **glossary** table contains information on abbreviations for the explosion database.

**TABLE 51: GLOSSARY**

Column	Storage Type	Description
1 <i>abbrev</i>	varchar2(16)	abbreviation name
2 <i>abbrevtype</i>	varchar2(16)	abbreviation type
3 <i>lineno</i>	number(4)	description line number
4 <i>descrip</i>	varchar2(80)	description
5 <i>dir</i>	varchar2(64)	directory
6 <i>dfile</i>	varchar2(32)	data file
7 <i>ldate</i>	date	load date

Category: Historical

Keys: Primary      *abbrev/lineno*

Data: Descriptive      *abbrevtype, descrip, dir, dfile*  
Administrative      *ldate*

## ▼ S/H/I Table Descriptions

**GREGION**

The **gregion** table contains geographic region numbers and their equivalent descriptions (see [Fli74]).

**TABLE 52: GREGION**

Column	Storage Type	Description
1 <i>grn</i>	number(8)	geographic region number
2 <i>grname</i>	varchar2(40)	geographic region name
3 <i>lenddate</i>	date	load date

Category: Core, Reference

Keys: Primary *grn*

Data: Descriptive *grn, grname*  
Administrative *lenddate*

**HYDRO\_ARR\_GROUP**

The **hydro\_arr\_group** table contains hydroacoustic arrival based estimates of slowness and azimuth.

**TABLE 53: HYDRO\_ARR\_GROUP**

Column	Storage Type	Description
1 <i>hydro_id</i>	number(8)	hydro-arrival-group identifier
2 <i>az1</i>	float(24)	azimuth estimated from lag times
3 <i>az2</i>	float(24)	second possible azimuth (2 arrivals)
4 <i>slow</i>	float(24)	slowness (s/km)
5 <i>delaz</i>	float(24)	azimuth uncertainty
6 <i>nhydarr</i>	number(4)	number of arrivals in hydro-arrival-group
7 <i>net</i>	varchar2(8)	hydro network name
8 <i>hyd_grp_phase</i>	varchar2(8)	hydro-arrival-group phase
9 <i>ldate</i>	date	load date

Category: Fundamental

Keys: Primary      *hydro\_id*  
          Foreign      *net*

Data: Descriptive      *nhydarr, hyd\_grp\_phase, slow*  
       Measurement      *az1, az2, delaz*  
       Administrative      *ldate*

**▼ S/H/I Table Descriptions****HYDRO\_ASSOC**

The **hydro\_assoc** table contains hydroacoustic arrival based estimates of slowness and azimuth.

**TABLE 54: HYDRO\_ASSOC**

Column	Storage Type	Description
1 <i>arid</i>	number(8)	arrival identifier
2 <i>hydro_id</i>	number(8)	hydro-arrival-group identifier
3 <i>azcontrib</i>	varchar2(1)	azimuth contribution flag (y or n)
4 <i>lenddate</i>	date	load date

Category: Fundamental

Keys:      Primary      *arid*  
              Foreign      *hydro\_id*

Data:      Descriptive      *azcontrib*  
              Administrative      *lenddate*

## HYDRO\_FEATURES

The **hydro\_features** table contains feature measurements for hydroacoustic data from the *DFX* application.

**TABLE 55: HYDRO\_FEATURES**

Column	Storage Type	Description
1 <i>arid</i>	number(8)	arrival identifier
2 <i>peak_time</i>	float(53)	time of largest absolute signal value
3 <i>peak_level</i>	float(24)	pressure of largest absolute signal value
4 <i>total_energy</i>	float(24)	total energy in signal
5 <i>mean_arrival_time</i>	float(53)	mean arrival time of signal energy
6 <i>time_spread</i>	float(24)	rms <sup>1</sup> time spread of signal
7 <i>onset_time</i>	float(53)	estimated onset time of signal
8 <i>termination_time</i>	float(53)	estimated termination time of signal
9 <i>total_time</i>	float(53)	total time above threshold
10 <i>num_cross</i>	number(8)	number of signal threshold crossings
11 <i>ave_noise</i>	float(24)	average pressure of the noise segment
12 <i>skewness</i>	float(24)	skew of the estimated signal energy
13 <i>kurtosis</i>	float(24)	kurtosis of the estimated signal energy
14 <i>cep_var_signal</i>	float(24)	variance of the cepstrum using spectrum
15 <i>cep_delay_time_signal</i>	float(24)	bubble pulse delay time using spectrum
16 <i>cep_peak_std_signal</i>	float(24)	number of standard deviations from the mean for amplitude using spectrum
17 <i>cep_var_trend</i>	float(24)	variance of the cepstrum detrended using Noise Spectrum Equalization (NSE)

## ▼ S/H/I Table Descriptions

**TABLE 55: HYDRO\_FEATURES (CONTINUED)**

Column	Storage Type	Description
18 <i>cep_delay_time_trend</i>	float(24)	bubble pulse delay time estimate using trend NSE
19 <i>cep_peak_std_trend</i>	float(24)	number of standard deviations from the mean for amplitude using the trend
20 <i>low_cut</i>	float(24)	low-cut frequency of filter
21 <i>high_cut</i>	float(24)	high-cut frequency of filter
22 <i>ford</i>	number(8)	filter order
23 <i>ftype</i>	varchar2(2)	filter type
24 <i>fzp</i>	number(8)	filter causality
25 <i>prob_weight_time</i>	float(53)	probability-weighted time
26 <i>sigma_time</i>	float(53)	variance of the probability-weighted time
27 <i>lddate</i>	date	load date

1. root mean square

Category: Fundamental

Keys: Primary      *arid*

Data: Descriptive      *low\_cut, high\_cut, ford, ftype, fzp, peak\_time, peak\_level, total\_energy, mean\_arrival\_time, time\_spread, onset\_time, termination\_time, total\_time, num\_cross, ave\_noise, skewness, kurtosis, cep\_var\_signal, cep\_delay\_time\_signal, cep\_peak\_std\_signal, cep\_var\_trend, cep\_delay\_time\_trend, cep\_peak\_std\_trend, prob\_weight\_time, sigma\_time lddate*

Measurement

Administrative

## INFRA\_FEATURES

The **infra\_features** table contains feature measurements for infrasonic data from the DFX application.

**TABLE 56: INFRA\_FEATURES**

Column	Storage Type	Description
1 <i>arid</i>	number(8)	arrival identifier
2 <i>eng_time</i>	float(53)	energy start time
3 <i>eng_dur</i>	float(24)	energy duration
4 <i>eng_deldur</i>	float(24)	standard deviation for energy duration
5 <i>coh_time</i>	float(53)	coherence start time
6 <i>coh_dur</i>	float(24)	coherence duration
7 <i>coh_deldur</i>	float(24)	standard deviation for coherence duration
8 <i>coinc_time</i>	float(53)	coincident start time
9 <i>coinc_dur</i>	float(24)	coincident duration
10 <i>coinc_deldur</i>	float(24)	standard deviation for coincident duration
11 <i>ford</i>	number(8)	filter order
12 <i>zrcr_freq</i>	float(24)	zero crossing frequency
13 <i>zrcr_delfreq</i>	float(24)	standard deviation for zero crossing frequency
14 <i>cnr_freq</i>	float(24)	corner frequency
15 <i>cnr_delfreq</i>	float(24)	standard deviation for corner frequency
16 <i>coh_per</i>	float(24)	spatial coherence period
17 <i>coh_snr</i>	float(24)	spatial coherence signal-to-noise ratio
18 <i>total_energy</i>	float(24)	total energy

## ▼ S/H/I Table Descriptions

**TABLE 56: INFRA\_FEATURES (CONTINUED)**

Column	Storage Type	Description
19 <i>auth</i>	varchar2(15)	author
20 <i>commid</i>	number(8)	comment identifier
21 <i>lenddate</i>	date	load date

Category: Fundamental

Keys: Primary      *arid*  
          Foreign      *commid*

Data: Descriptive      *ford*  
       Measurement      *eng\_time, eng\_dur, eng\_deldur, coh\_time, coh\_dur,*  
                           *coh\_deldur, coinc\_time, coinc\_dur, coinc\_deldur,*  
                           *zrcr\_freq, zrcr\_delfreq, crnr\_freq, crnr\_delfreq,*  
                           *coh\_per, coh\_snr, total\_energy*  
       Administrative      *auth, lendate*

## INSTRUMENT

The **instrument** table contains ancillary calibration information. This table holds nominal one-frequency calibration factors for each instrument and pointers to the nominal frequency-dependent calibration for an instrument. It also holds pointers to the exact calibrations obtained by direct measurement on a particular instrument (see **sensor**).

**TABLE 57: INSTRUMENT**

Column	Storage Type	Description
1 <i>inid</i>	number(8)	instrument identifier
2 <i>insname</i>	varchar2(50)	instrument name
3 <i>instype</i>	varchar2(6)	instrument type
4 <i>band</i>	varchar2(1)	frequency band
5 <i>digital</i>	varchar2(1)	data type, digital (d), or analog (a)
6 <i>samprate</i>	float(24)	sampling rate in samples/second
7 <i>ncalib</i>	float(24)	nominal calibration (nanometers/digital count)
8 <i>ncalper</i>	float(24)	nominal calibration period (seconds)
9 <i>dir</i>	varchar2(64)	directory
10 <i>dfile</i>	varchar2(32)	data file
11 <i>rsptype</i>	varchar2(6)	response type
12 <i>lddate</i>	date	load date

Category: Core, Reference

Keys: Primary      *inid*

Data: Descriptive      *insname*, *instype*, *band*, *digital*, *dir*, *dfile*, *rsptype*  
           Measurement      *samprate*, *ncalib*, *ncalper*  
           Administrative      *lddate*

▼ **S/H/I Table Descriptions**

## INTERVAL

The **interval** table defines units of processing. The *time*, *endtime*, and *name* fields indicate processing times for a named object. The *class* field allows a single **interval** table to be used for different classes of objects.

**TABLE 58: INTERVAL**

Column	Storage Type	Description
1 <i>intvlid</i>	number(8)	interval identifier
2 <i>class</i>	varchar2(16)	type of interval
3 <i>name</i>	varchar2(20)	name of interval
4 <i>time</i>	float(53)	starting time of data
5 <i>endtime</i>	float(53)	ending time of data
6 <i>state</i>	varchar2(16)	current processing state
7 <i>moddate</i>	date	time of last processing state change
8 <i>lenddate</i>	date	load date

Category: Distributed Processing

Keys: Primary *class/name/time/endtime*  
Alternate *intvlid*

Data: Descriptive *class, name, state*  
*Measurement* *time, endtime*  
Administrative *moddate, lendate*

## LASTID, PROBLASTID, RMS\_LASTID

The **lastid** table contains counter values (last value used for keys). This table is a reference table from which programs may retrieve the last sequential value of one of the numeric keys. Unique keys are required before inserting a record in numerous tables. The table has exactly one row for each *keyname*. **Problastid** and **rms\_lastid** are views of the **lastid** table.

**TABLE 59: LASTID (PROBLASTID, RMS\_LASTID)**

Column	Storage Type	Description
1 <i>keyname</i>	varchar2(15)	identifier name ( <i>arid</i> , <i>orid</i> , and so on)
2 <i>keyvalue</i>	number(8)	last value used for that identifier
3 <i>lenddate</i>	date	load date

Category: Database and Utility

Keys: Primary      *keyname*

Data: Descriptive      *keyname, keyvalue*  
Administrative      *lenddate*

▼ S/H/I Table Descriptions

## LOCATION

The **location** table contains information on mines and test sites.

**TABLE 60: LOCATION**

Column	Storage Type	Description
1 <i>locname</i>	varchar2(15)	location name
2 <i>sublocname</i>	varchar2(25)	sub-location name
3 <i>locid</i>	varchar2(30)	location identifier
4 <i>lat</i>	float(24)	latitude
5 <i>lon</i>	float(24)	longitude
6 <i>elev</i>	float(24)	surface elevation (km)
7 <i>tdepth</i>	float(24)	tunnel depth
8 <i>descrip</i>	varchar2(50)	text description
9 <i>auth</i>	varchar2(15)	author
10 <i>commid</i>	number(8)	comment identifier
11 <i>lenddate</i>	date	load date

Category: Historical

Keys: Primary                    *locid*  
          Alternate                *lat/lon/elev/tdepth*  
          Foreign                  *commid*

Data: Descriptive              *locname, sublocname, locid, descrip*  
          Measurement            *lat, lon, elev, tdepth*  
          Administrative        *auth, lenddate*

## MAPCOLOR

The **mapcolor** table contains information to associate a *mapid* from the **mapdisc** table with a *colormapid* from the **colordisc** table. This table is used to plot the same map (*mapid*) in different colors (for example, brown, green, or outline).

**TABLE 61: MAPCOLOR**

Column	Storage Type	Description
1 <i>mapid</i>	number(8)	map identifier
2 <i>colormapid</i>	number(8)	colormap identifier
3 <i>lenddate</i>	date	load date

Category: Interactive Processing

Keys: Primary      *mapid/colormapid*

Data: Administrative      *lenddate*

## ▼ S/H/I Table Descriptions

**MAPDISC**

The **mapdisc** table contains information about map files that are on disk.

**TABLE 62: MAPDISC**

Column	Storage Type	Description
1 <i>mapid</i>	number(8)	map identifier
2 <i>mapname</i>	varchar2(64)	map name
3 <i>dfile</i>	varchar2(32)	map data filename
4 <i>dir</i>	varchar2(64)	directory
5 <i>maptype</i>	number(8)	map type
6 <i>mapfiletype</i>	varchar2(4)	map file type
7 <i>projection</i>	number(8)	map projection
8 <i>dimx</i>	number(8)	map x dimension
9 <i>dimy</i>	number(8)	map y dimension
10 <i>reflon</i>	float(24)	reference longitude
11 <i>reflat</i>	float(24)	reference latitude
12 <i>refoffsetlon</i>	float(24)	longitude reference offset
13 <i>refoffsetlat</i>	float(24)	latitude reference offset
14 <i>lonorigradians</i>	float(24)	longitude origin radians
15 <i>latorigradians</i>	float(24)	latitude origin radians
16 <i>scale</i>	float(24)	map scale
17 <i>rotation</i>	float(24)	map rotation
18 <i>latminor</i>	float(24)	latitude interval for minor grid lines
19 <i>latmajor</i>	float(24)	latitude interval for major grid lines
20 <i>lonminor</i>	float(24)	longitude interval for minor grid lines
21 <i>lonmajor</i>	float(24)	longitude interval for major grid lines
22 <i>bordercolor</i>	varchar2(32)	border color name

**TABLE 62: MAPDISC (CONTINUED)**

<b>Column</b>		<b>Storage Type</b>	<b>Description</b>
23 <i>label</i>		varchar2(65)	map category
24–38 <i>gctp1</i> through <i>gctp15</i>		float(53)	general cartographic transformation package variables
39 <i>lddate</i>		date	load date

Category: Interactive Processing

Keys: Primary *mapid*

Data: Descriptive *mapname, dfile, dir, maptype, map filetype, projection, bordercolor, label*  
 Measurement *dimx, dimy, reflon, reflat, reoffsetlon, reoffsetlat, lonorigradians, latorigradians, scale, rotation, latminor, latmajor, lonminor, lonmajor, gctp1–15*  
 Administrative *lddate*

**▼ S/H/I Table Descriptions****MAPOVER**

The **mapover** table contains links between the **mapdisc** and **overlaydisc** tables.

**TABLE 63: MAPOVER**

Column	Storage Type	Description
1 <i>mapid</i>	number(8)	map identifier
2 <i>overlayid</i>	number(8)	overlay identifier
3 <i>lenddate</i>	date	load date

Category: Interactive Processing

Keys: Primary *mapid/overlayid*

Data: Administrative *lenddate*

## MAPPOINT

The **mappoint** table contains labeled point data to be displayed by the *Map* application.

**TABLE 64: MAPPOINT**

Column	Storage Type	Description
1 <i>lat</i>	float(24)	latitude
2 <i>lon</i>	float(24)	longitude
3 <i>mplabel</i>	varchar2(65)	map point type
4 <i>mptype</i>	varchar2(20)	map point label
5 <i>mpdescrip</i>	varchar2(50)	map point description
6 <i>lenddate</i>	date	load date

Category: Interactive Processing

Keys: Primary      *lat/lon/mptype*

Data: Descriptive      *lat, lon, mplabel, mptype, mpdescrip*  
Administrative      *lenddate*

**▼ S/H/I Table Descriptions****MIG\_DATE**

The **mig\_date** table is used by the *MigrateData* application to track table migration.

**TABLE 65: MIG\_DATE**

Column	Storage Type	Description
1 <i>procclass</i>	varchar2(16)	process class
2 <i>procname</i>	varchar2(16)	process name
3 <i>last_mig_date</i>	date	last migration date
4 <i>lenddate</i>	date	load date

Category: Data Services

Keys: Primary      *procclass/procname*

Data: Descriptive      *procclass, procname, last\_mig\_date*  
Administrative      *lenddate*

## MIG\_RULES

The **mig\_rules** table contains rules for migrating database tables from one database table to another and are specified in Table 66.

**TABLE 66: MIG\_RULES**

Column	Storage Type	Description
1 <i>task_num</i>	number	order of this task
2 <i>query_type</i>	varchar2(20)	type of query
3 <i>src</i>	varchar2(10)	source database
4 <i>src_tbl</i>	varchar2(30)	source table
5 <i>dest</i>	varchar2(10)	destination database
6 <i>dest_tbl</i>	varchar2(30)	destination table
7 <i>quer_seq_no</i>	number	order of this part of the query
8 <i>seq_type</i>	varchar2(15)	type of sequence to be added to the query
9 <i>seq_contents</i>	varchar2(200)	query contents

Category: Data Services

Keys: Primary *task\_num/query\_type/src\_tbl*

Data: Descriptive *task\_num, query\_type, src, src\_tbl, dest, dest\_tbl, quer\_seq\_no, seq\_type, seq\_contents*

## ▼ S/H/I Table Descriptions

**MSG AUX**

The **msgaux** table contains records of unsuccessfully processed *AutoDRM* messages.

**TABLE 67: MSG AUX**

<b>Column</b>	<b>Storage Type</b>	<b>Description</b>
1 <i>msgid</i>	number(8)	message identifier
2 <i>msgrow</i>	number(4)	line number in message
3 <i>state_count</i>	number(4)	number of failures
4 <i>command</i>	varchar2(24)	<i>AutoDRM</i> command that could not be processed
5 <i>sub_status</i>	varchar2(24)	cause of failure
6 <i>ldate</i>	date	load date

Category: Data Services

Keys: Primary      *msgid/msgrow/state\_count*

Data: Descriptive  
Measurement  
Administrative      *command, sub\_status*  
                        *msgrow, state\_count*  
                        *ldate*

## MSGDATATYPE

The **msgdatatype** table supports data tracking by recording each data section in a message for both incoming and outgoing *AutoDRM* data messages.

**TABLE 68: MSGDATATYPE**

Column	Storage Type	Description
1 <i>msgid</i>	number(8)	message identifier
2 <i>msgdtype</i>	varchar2(16)	data type of the data section within the message
3 <i>msgdformat</i>	varchar2(16)	general format of data that follows
4 <i>status</i>	varchar2(32)	status of the data section
5 <i>foff</i>	number(8)	file offset to beginning of data section
6 <i>msize</i>	number(8)	size of data section
7 <i>ldate</i>	date	load date

Category: Data Services

Keys: Primary *msgid/foff*

Data: Descriptive *msgdtype, msgdformat*  
Measurement *status, foff, msize*  
Administrative *ldate*

▼ **S/H/I Table Descriptions**

## **MSGDEST**

The **msgdest** table contains information about AutoDRM messages sent from the IDC.

**TABLE 69: MSGDEST**

Column	Storage Type	Description
1 <i>msgdid</i>	number(8)	message destination identifier
2 <i>msgid</i>	number(8)	message identifier
3 <i>transmeth</i>	varchar2(16)	method by which the response is to be delivered to the requester
4 <i>emailto</i>	varchar2(64)	email address to send message
5 <i>status</i>	varchar2(32)	current status of the response message
6 <i>itime</i>	float(53)	time at which table entry was made
7 <i>stime</i>	float(53)	time at which message was sent
8 <i>lddate</i>	date	load date

Category: Data Services

Keys: Primary      *msgdid*  
Foreign      *msgid*

Data: Descriptive      *transmeth*  
Data      *emailto, status, stime, itime*  
Administrative      *lddate*

**MSGDISC**

The **msgdisc** table contains information pertinent to *AutoDRM* messages including the date and time that the message was sent or received, identification information, and where the message is stored.

**TABLE 70: MSGDISC**

<b>Column</b>	<b>Storage Type</b>	<b>Description</b>
1 <i>msgid</i>	number(8)	message identifier
2 <i>userid</i>	number(8)	user identifier
3 <i>msgver</i>	varchar2(8)	message system version number
4 <i>msgtype</i>	varchar2(16)	message type
5 <i>subtype</i>	varchar2(2)	message subtype
6 <i>extmsgid</i>	varchar2(20)	message identification string provided by the sender
7 <i>intid</i>	number(8)	either the locally generated <i>msgid</i> of an earlier table entry that evoked the creation of this table entry or the <i>reqid</i> from the <b>request</b> table of an internally generated request
8 <i>intidtype</i>	varchar2(16)	<i>intid</i> type
9 <i>msgsrc</i>	varchar2(16)	message source code
10 <i>itime</i>	float(53)	initial time message was received
11 <i>idate</i>	number(8)	initial date message was received
12 <i>imethod</i>	varchar2(8)	input method ( <b>email</b> or <b>ftp</b> )
13 <i>isrc</i>	varchar2(64)	initial source of message
14 <i>msize</i>	number(10)	message size in bytes
15 <i>status</i>	varchar2(32)	status of message
16 <i>subject</i>	varchar2(64)	subject header from email message
17 <i>dir</i>	varchar2(64)	directory to find file
18 <i>dfile</i>	varchar2(32)	name of data file

## ▼ S/H/I Table Descriptions

TABLE 70: MSGDISC (CONTINUED)

Column	Storage Type	Description
19 <i>foff</i>	number(10)	byte offset of data segment within file
20 <i>mfoff</i>	number(10)	offset in bytes to beginning of message
21 <i>fileoff</i>	number(10)	number of bytes to the first character of the email file (first character of the email header)
22 <i>filesize</i>	number(10)	size of file
23 <i>sigtype</i>	varchar2(64)	digital signature type
24 <i>verifstatus</i>	varchar2(4)	status of verification
25 <i>commid</i>	number(8)	comment identifier
26 <i>lenddate</i>	date	load date

## Category: Data Services

Keys: Primary *msgid*  
Foreign *userid, intid, commid*

Data:	Descriptive	<i>msgver, msgtype, intidtype, subtype, msgsrc, status, subject, dir, dfile, foff, mfoff, fileoff, filesize, sigtype, verifstatus</i>
	Measurement	<i>extrmsgid, intid, itime, idate, imethod, isrc, msiz</i>
	Administrative	<i>ldate</i>

**NA\_VALUE**

The **na\_value** table contains the default values to be inserted for a column when not available.

**TABLE 71: NA\_VALUE**

Column	Storage Type	Description
1 <i>attribute</i>	varchar2(30)	column name
2 <i>na_value</i>	varchar2(30)	value inserted when not available

Category: Database and Utility

Keys: Primary      *attribute*

Data: Descriptive      *attribute, na\_value*

▼ **S/H/I Table Descriptions**

## NETMAG

The **netmag** table contains estimates of network magnitudes of different types for an event. Each network magnitude has a unique *magid*. Station magnitudes used to compute the network magnitude are in the **stamag** table.

**TABLE 72: NETMAG**

Column	Storage Type	Description
1 <i>magid</i>	number(8)	network magnitude identifier
2 <i>net</i>	varchar2(8)	unique network identifier
3 <i>orid</i>	number(8)	origin identifier
4 <i>evid</i>	number(8)	event identifier
5 <i>magtype</i>	varchar2(6)	magnitude type (Ms, mb, and so on)
6 <i>nsta</i>	number(8)	number of stations used
7 <i>magnitude</i>	float(24)	magnitude
8 <i>uncertainty</i>	float(24)	magnitude uncertainty
9 <i>auth</i>	varchar2(15)	source/originator
10 <i>commid</i>	number(8)	comment identifier
11 <i>lenddate</i>	date	load date

Category: Core, Fundamental

Keys:	Primary <i>magid</i>
	Foreign <i>evid, net, orid, commid</i>
Data:	Descriptive <i>net, magtype</i>
	Measurement <i>magnitude, nsta, uncertainty</i>
	Administrative <i>auth, lenddate</i>

## NETWORK

The **network** table contains general information about seismic networks (see **affiliation**).

**TABLE 73: NETWORK**

Column	Storage Type	Description
1 <i>net</i>	varchar2(8)	unique network identifier
2 <i>netname</i>	varchar2(80)	network name
3 <i>nettype</i>	varchar2(4)	network type: array, local, world-wide, and so on
4 <i>auth</i>	varchar2(15)	source/originator
5 <i>commid</i>	number(8)	comment identifier
6 <i>lenddate</i>	date	load date

Category: Core, Reference

Keys: Primary *net*  
Foreign *commid*

Data: Descriptive *net, netname, nettype*  
Administrative *auth, lenddate*

## ▼ S/H/I Table Descriptions

**ORIGAUX**

The **origaux** table contains additional data for supplementary events that cannot be inserted into **origin**, **origerr**, **netmag**, and **remark** tables.

**TABLE 74: ORIGAUX**

<b>Column</b>	<b>Storage Type</b>	<b>Description</b>
1 <i>event</i>	varchar2(8)	unique event identifier (string)
2 <i>otfixf</i>	varchar2(1)	origin time fixed flag
3 <i>epfixf</i>	varchar2(1)	epicenter fixed flag
4 <i>nsta</i>	number(8)	number of defining stations
5 <i>gap</i>	number(4)	gap in azimuth coverage (degrees)
6 <i>ident</i>	varchar2(8)	unique ident (string)
7 <i>mindist</i>	float(24)	distance to closest station (degrees)
8 <i>maxdist</i>	float(24)	distance to farthest station (degrees)
9 <i>antype</i>	varchar2(1)	analysis type
10 <i>evid</i>	number(8)	event identifier
11 <i>orid</i>	number(8)	origin identifier
12 <i>Iddate</i>	date	load date

Category: System Monitoring

Keys:	Primary Foreign	<i>orid</i> <i>evid</i>
Data:	Descriptive Measurement Administrative	<i>antype</i> , <i>epfixf</i> , <i>otfixf</i> <i>gap</i> , <i>maxdist</i> , <i>mindist</i> , <i>nsta</i> <i>event</i> , <i>ident</i> , <i>Iddate</i>

## ORIGERR, ORIGERR\_TEMP\_GA

The `origerr` table contains summaries of confidence bounds in origin estimations. The `origerr_temp_ga` table is used by the GA application to store temporary origin error information. The measurement fields are the elements of the location covariance matrix. The descriptive fields give the uncertainties in location, depth, and origin time. These quantities are calculated from the covariance matrix, assuming gaussian errors and a confidence level *conf*.

**TABLE 75: ORIGERR (ORIGERR\_TEMP\_GA)**

Column	Storage Type	Description
1 <i>orid</i>	number(8)	origin identifier
2–11 <i>sxx</i> , <i>syy</i> , <i>szz</i> , <i>stt</i> , <i>sxy</i> , <i>sxz</i> , <i>syz</i> , <i>stx</i> , <i>sty</i> , <i>stz</i>	float(24)	covariance matrix elements
12 <i>sdobs</i>	float(24)	standard error of observations
13 <i>smajax</i>	float(24)	semi-major axis of error
14 <i>sminax</i>	float(24)	semi-minor axis of error
15 <i>strike</i>	float(24)	strike of the semi-major axis
16 <i>sdepth</i>	float(24)	depth error
17 <i>stime</i>	float(24)	origin time error
18 <i>conf</i>	float(24)	confidence
19 <i>commid</i>	number(8)	comment identifier
20 <i>ldate</i>	date	load date

Category: Core, Fundamental

Keys: Primary *orid*  
Foreign *commid*

Data: Descriptive *sdobs*, *smajax*, *sminax*, *strike*, *sdepth*, *stime*, *conf*  
Measurement *sxx*, *syy*, *szz*, *stt*, *sxy*, *sxz*, *syz*, *stx*, *sty*, *stz*  
Administrative *ldate*

## ▼ S/H/I Table Descriptions

**ORIGIN, ORIGINREF,  
ORIGIN\_TEMP\_GA**

The `origin`, `originref`, and `origin_temp_ga` tables contain information describing a derived or reported origin for a particular event. The `origin_temp_ga` table is used by the GA application to store temporary origins.

**TABLE 76: ORIGIN (ORIGINREF, ORIGIN\_TEMP\_GA)**

Column	Storage Type	Description
1 <i>lat</i>	float(24)	estimated latitude
2 <i>lon</i>	float(24)	estimated longitude
3 <i>depth</i>	float(24)	estimated depth
4 <i>time</i>	float(53)	epoch time
5 <i>orid</i>	number(8)	origin identifier
6 <i>evid</i>	number(8)	event identifier
7 <i>jdate</i>	number(8)	Julian date
8 <i>nass</i>	number(4)	number of associated phases
9 <i>ndef</i>	number(4)	number of locating phases
10 <i>ndp</i>	number(4)	number of depth phases
11 <i>grn</i>	number(8)	geographic region number
12 <i>srn</i>	number(8)	seismic region number
13 <i>etype</i>	varchar2(7)	event type
14 <i>depdp</i>	float(24)	estimated depth from depth phases
15 <i>dtype</i>	varchar2(1)	depth method used
16 <i>mb</i>	float(24)	body wave magnitude
17 <i>mbid</i>	number(8)	$m_b$ magnitude identifier
18 <i>ms</i>	float(24)	surface wave magnitude
19 <i>msid</i>	number(8)	$M_s$ magnitude identifier
20 <i>ml</i>	float(24)	local magnitude

**TABLE 76: ORIGIN (ORIGINREF, ORIGIN\_TEMP\_GA) (CONTINUED)**

Column	Storage Type	Description
21 <i>mlid</i>	number(8)	M <sub>L</sub> magnitude identifier
22 <i>algorithm</i>	varchar2(15)	location algorithm used
23 <i>auth</i>	varchar2(15)	source/originator
24 <i>commid</i>	number(8)	comment identifier
25 <i>lenddate</i>	date	load date

Category: Core, Fundamental

Keys: Primary      *orid*  
          Alternate    *lat/lon/depth/time*  
          Foreign     *evid, mbid, msid, mlid, commid*

Data: Descriptive    *nass, ndef, ndp, grn, srn, etype*  
          Measurement   *lat, lon, depth, time, jdate, depdp, dtype, mb, mbid,*  
                        *ms, msid, ml, mlid*  
          Administrative   *algorithm, auth, lenddate*

▼ **S/H/I Table Descriptions**

## OUTAGE

The **outage** table contains the availability of time-series data. If the available column is set to “f,” it specifies that no data are available for the interval. Conversely, the **outage** table can be used to specify that data are available for an interval by setting the available column to “t.”

**TABLE 77: OUTAGE**

Column	Storage Type	Description
1 <i>otgid</i>	number(8)	outage identifier
2 <i>sta</i>	varchar2(6)	station code
3 <i>chan</i>	varchar2(8)	channel code
4 <i>auxid</i>	varchar2(4)	auxiliary identification code
5 <i>time</i>	float(53)	start time of outage interval
6 <i>endtime</i>	float(53)	end time of outage interval
7 <i>status</i>	varchar2(32)	status of outage
8 <i>auth</i>	varchar2(15)	source/originator of outage report
9 <i>available</i>	varchar2(1)	flag to specify if data are unavailable (f) or available (t)
10 <i>commid</i>	number(8)	comment identifier
11 <i>lenddate</i>	date	load date

Category: Data Services

Keys: Primary      *otgid*  
          Alternate      *sta/chan/time/endtime*

Data: Descriptive      *sta, chan, auxid, status, auth, available, commid*  
          Measurement      *time, endtime*  
          Administrative      *lenddate*

## OVERLAYDISC

The **overlaydisc** table contains the location of the overlays for the *Map* application.

**TABLE 78: OVERLAYDISC**

Column	Storage Type	Description
1 <i>overlayid</i>	number(8)	overlay identifier
2 <i>overlayname</i>	varchar2(64)	overlay name
3 <i>dfile</i>	varchar2(32)	data filename
4 <i>dir</i>	varchar2(64)	directory
5 <i>colortname</i>	varchar2(32)	overlay color name
6 <i>ldate</i>	date	load date

Category: Interactive Processing

Keys: Primary      *overlayid*

Data: Descriptive      *overlayname, dfile, dir, colortname*  
           Administrative      *ldate*

▼ S/H/I Table Descriptions

## PARRIVAL

The **parrival** table contains the predicted arrivals and associations for origin-based amplitude measurements.

**TABLE 79: PARRIVAL**

Column	Storage Type	Description
1 <i>parid</i>	number(8)	predicted arrival identifier
2 <i>orid</i>	number(8)	origin identifier
3 <i>evid</i>	number(8)	event identifier
4 <i>sta</i>	varchar2(6)	station code
5 <i>time</i>	float(53)	epoch time
6 <i>azimuth</i>	float(24)	azimuth
7 <i>slow</i>	float(24)	slowness (s/deg)
8 <i>phase</i>	varchar2(8)	associated phase
9 <i>delta</i>	float(24)	station to event distance
10 <i>vmodel</i>	varchar2(15)	velocity model
11 <i>lddate</i>	date	load date

Category: Fundamental

Keys:	Primary Alternate Foreign	<i>parid</i> <i>sta/time</i> <i>orid, evid</i>
Data:	Descriptive Measurement Administrative	<i>sta, phase, vmodel</i> <i>time, azimuth, slow, delta</i> <i>lddate</i>

## PARTICIPATION

The **participation** table contains station participation information for performance reporting.

**TABLE 80: PARTICIPATION**

Column	Storage Type	Description
1 <i>net</i>	varchar2(8)	network name
2 <i>sta</i>	varchar2(6)	station name
3 <i>begin_date</i>	number(8)	date participation began
4 <i>end_date</i>	number(8)	date participation ended
5 <i>Iddate</i>	date	load date

Category: Reference

Keys: Primary *net/sta*

Data: Descriptive *net, sta*  
 Measurement *begin\_date, end\_date*  
 Administrative *Iddate*

▼ **S/H/I Table Descriptions**

## PROBLEM

The **problem** table contains information related to problems with stations, communications, software, and hardware.

**TABLE 81: PROBLEM**

Column	Storage Type	Description
1 <i>prid</i>	number(8)	problem identifier
2 <i>procclass</i>	varchar2(17)	process class
3 <i>procname</i>	varchar2(17)	process name
4 <i>time</i>	number(17,5)	epoch time of start of problem
5 <i>endtime</i>	number(17,5)	epoch time of end of problem
6 <i>status</i>	varchar2(33)	status of problem
7 <i>class</i>	varchar2(33)	class of problem
8 <i>descrip</i>	varchar2(129)	one line description of problem
9 <i>login</i>	varchar2(33)	login name of originator
10 <i>lenddate</i>	date	load date

Category: System Monitoring

Keys: Primary      *prid*

Data: Descriptive      *procclass, procname, status, class, descrip, login*  
           Measurement      *time, endtime*  
           Administrative      *lenddate*

## PROBLEMLOG

The **problemlog** table contains individual problem log entries relating to problems in the *database table*.

**TABLE 82: PROBLEMLOG**

Column	Storage Type	Description
1 <i>plid</i>	number(8)	problem log identifier
2 <i>prid</i>	number(8)	problem identifier
3 <i>time</i>	number(17,5)	time of log entry
4 <i>dir</i>	varchar2(129)	directory of log file
5 <i>dfile</i>	varchar2(65)	filename of log file
6 <i>login</i>	varchar2(33)	login name of originator
7 <i>Iddate</i>	date	load date

Category: System Monitoring

Keys:	Primary <i>plid</i>
	Foreign <i>prid</i>
Data:	Descriptive <i>dir, dfile, login</i>
	Measurement <i>time</i>
	Administrative <i>Iddate</i>

**▼ S/H/I Table Descriptions****PROBLEMMAIL**

The **problemmail** table contains instructions for distributing problem messages to subscribers.

**TABLE 83: PROBLEMMAIL**

Column	Storage Type	Description
1 <i>procclass</i>	varchar2(17)	subscription category
2 <i>login</i>	varchar2(33)	login name of originator
3 <i>lenddate</i>	date	load date

Category: System Monitoring

Keys: Primary      *procclass/login*

Data: Descriptive      *procclass, login*  
Administrative      *lenddate*

## PRODTRACK

The **prodtrack** table queues and links data and subscription products. The *dataid* column links the product delivery to the data encapsulated in the **dataready** table, and the *msgid* column links the product to the outgoing message, as referenced in the **msgdisc** table. Thus, the **prodtrack** table allows for subscription tracking from the data to the product.

**TABLE 84: PRODTRACK**

Column	Storage Type	Description
1 <i>prodid</i>	number(8)	product identifier
2 <i>delivid</i>	number(8)	delivery identifier
3 <i>dataid</i>	number(8)	data ready identifier
4 <i>msgid</i>	number(8)	message identifier
5 <i>status</i>	varchar2(12)	status of the product
6 <i>lenddate</i>	date	load date

Category: Data Services

Keys: Primary *prodid/dataid/msgid*  
Foreign *dataid, msgid*

Data: Descriptive *delivid, status*  
Administrative *lenddate*

## ▼ S/H/I Table Descriptions

**PRODUCTCRITERIA**

The **productcriteria** table contains subscription information about the type of product and when and how often to distribute the data. Each unique product has one record.

**TABLE 85: PRODUCTCRITERIA**

<b>Column</b>	<b>Storage Type</b>	<b>Description</b>
1 <i>prodid</i>	number(8)	product identifier
2 <i>prodname</i>	varchar2(24)	product name (if a standard product)
3 <i>delivid</i>	number(8)	last delivery for this product
4 <i>cycle_size</i>	number(8)	product size to be reached before release (0 for no limit)
5 <i>cycle_time</i>	number(4)	time interval between releases (0 for immediate)
6 <i>hour_to_send</i>	number(2)	hour to send product
7 <i>dow_to_send</i>	number(2)	day of week to send subscription
8 <i>dom_to_send</i>	number(2)	day of month to send subscription
9 <i>prodtype</i>	varchar2(32)	product type ( <i>origin</i> , <i>detection</i> , and so on)
10 <i>prodsubtype</i>	varchar2(12)	product subtype (for example, bulletin type)
11 <i>prodfmt</i>	varchar2(6)	format of outgoing product
12 <i>supresempty</i>	char(2)	if "no," empty messages may be sent
13 <i>timelastsend</i>	float(54)	epoch time of the last transmission
14 <i>timenextsend</i>	float(54)	epoch time of the next transmission
15 <i>lenddate</i>	date	load date

Category: Data Services

Keys: Primary      *prodid*

Data: Descriptive      *prodname, cycle\_site, cycle\_time, hour\_to\_send,  
how\_to\_send, dom\_to\_send, prodtype,  
prods subtype, prodfmt, suppress\_empty  
delivid, timelastsend, timenextsend  
ldate*

Measurement

Administrative

## ▼ S/H/I Table Descriptions

**PRODUCTTYPEEVSC**

The **producttypeevsc** table contains the input parameters that define the event-screening criteria for the standard case and national subscriptions. It is used in conjunction with the **producttypeorigin** table to specify the set of user input criteria. There is one record for each subscription (*prodid*).

**TABLE 86: PRODUCTTYPEEVSC**

<b>Column</b>	<b>Storage Type</b>	<b>Description</b>
1 <i>prodid</i>	number(8)	product identifier
2 <i>grpname</i>	varchar2(24)	subscription group name
3 <i>regname</i>	varchar2(24)	region name
4 <i>min_ndef</i>	number(8)	minimum number of defining phases
5 <i>min_mb</i>	float(24)	minimum mb for screening
6 <i>depth_conf</i>	float(24)	depth screening confidence
7 <i>depth_thresh</i>	float(24)	depth screening threshold
8 <i>depth_kvalue</i>	float(24)	depth uncertainty k-value
9 <i>min_ndp_pp</i>	number(8)	minimum required number of pP depth phases
10 <i>min_ndp_sp</i>	number(8)	minimum required number of sP depth phases
11 <i>min_moveout_pp</i>	float(24)	minimum moveout of pP-P travel time differences
12 <i>min_moveout_sp</i>	float(24)	minimum moveout of sP-P travel time differences
13 <i>min_dp_snr_pp</i>	float(24)	minimum pP depth phase snr
14 <i>min_dp_snr_sp</i>	float(24)	minimum sP depth phase snr
15 <i>mbms_conf</i>	float(24)	$m_b$ minus $M_s$ screening confidence
16 <i>mbms_thresh</i>	float(24)	$m_b$ minus $M_s$ screening threshold
17 <i>mbms_slope</i>	float(24)	slope term for $m_b$ minus $M_s$ relation

**TABLE 86: PRODUCTTYPEVSC (CONTINUED)**

Column	Storage Type	Description
18 <i>magpref_mb</i>	varchar2(6)	$m_b$ magnitude type used for screening.
19 <i>magpref_ms</i>	varchar2(6)	$M_s$ magnitude type used for screening.
20 <i>mb_err</i>	float(24)	single-station $m_b$ uncertainty
21 <i>ms_err</i>	float(24)	single-station $M_s$ uncertainty
22 <i>min_nsta_ms</i>	number(8)	minimum number of stations for ms
23 <i>loc_conf</i>	float(24)	location error ellipse confidence
24 <i>hydro_te_thresh</i>	float(24)	hydroacoustic total energy threshold
25 <i>hydro_cp_thresh</i>	float(24)	hydroacoustic cepstral peak threshold
26 <i>min_wdepth_thresh</i>	float(24)	minimum water depth threshold
27 <i>reg_conf</i>	float(24)	regional screening confidence
28 <i>Iddate</i>	date	load date

Category: Data Services

Keys: Primary *prodid/grpname/regname*Data: Descriptive  
*min\_ndef, min\_mb, depth\_conf, depth\_thresh,*  
*depth\_kvalue, min\_ndp\_pp, min\_ndp\_sp,*  
*min\_moveout\_pp, min\_moveout\_ps, min\_dp\_snr\_pp,*  
*min\_dp\_snr\_sp, mbms\_conf, mbms\_thresh,*  
*mbms\_slope, magpref\_mb, magpref\_ms, mb\_err,*  
*ms\_err, min\_nsta\_ms, loc\_conf, hydro\_te\_thresh,*  
*hydro\_cp\_thresh, min\_wdepth\_thresh, reg\_conf*  
*Iddate*

Administrative

## ▼ S/H/I Table Descriptions

**PRODUCTTYPEORIGIN**

The **producttypeorigin** table contains the details of origin subscriptions. It extends the **productcriteria** table that is generic to all subscriptions. Each origin-based product has one record.

**TABLE 87: PRODUCTTYPEORIGIN**

Column	Storage Type	Description
1 <i>prodid</i>	number(8)	product identifier
2 <i>minlat</i>	float(24)	minimum latitude of event
3 <i>maxlat</i>	float(24)	maximum latitute of event
4 <i>minlon</i>	float(24)	minimum longitude of event
5 <i>maxlon</i>	float(24)	maximum longitude of event
6 <i>mindepth</i>	float(24)	minimum depth of event
7 <i>maxdepth</i>	float(24)	maximum depth of event
8 <i>minmag</i>	float(24)	minimum magnitude
9 <i>maxmag</i>	float(24)	maximum magnitude
10 <i>magtype</i>	varchar2(4)	magnitude type
11 <i>minmb_ms</i>	float(24)	minimum value of $m_b$ minus $M_s$
12 <i>maxmb_ms</i>	float(24)	maximum value of $m_b$ minus $M_s$
13 <i>mindep_err</i>	float(24)	minimum value of depth minus error
14 <i>maxdep_err</i>	float(24)	maximum value of depth minus error
15 <i>minesd</i>	float(24)	minimum event-station distance
16 <i>maxesd</i>	float(24)	maximum event-station distance

Category: Data Services

Keys: Primary      *prodid*

Data: Descriptive      *minlat, maxlat, minlon, maxlon, mindepth,*  
*maxdepth, minmag, maxmag, magtype, minmb\_ms,*  
*maxmb\_ms, mindep\_err, maxdep\_err, minesd,*  
*maxesd*

▼ **S/H/I Table Descriptions**

## PRODUCTTYPESTA

The **producttypesta** table contains the criteria used for defining subscription products with constraints that are based on the station. If a user requests a subscription for multiple stations, the table will have one **productcriteria** row, but multiple **producttypesta** rows (one for each station); all of the **producttypesta** rows will have a common value of *prodid*.

**TABLE 88: PRODUCTTYPESTA**

Column	Storage Type	Description
1 <i>prodid</i>	number(8)	product identifier
2 <i>minlat</i>	float(24)	minimum station latitude
3 <i>maxlat</i>	float(24)	maximum station latitude
4 <i>minlon</i>	float(24)	minimum station longitude
5 <i>maxlon</i>	float(24)	maximum station longitude
6 <i>sta</i>	varchar2(6)	station name
7 <i>chan</i>	varchar2(8)	channel name

Category: Data Services

Keys: Primary      *prodid/sta/chan*

Data: Descriptive      *minlat, maxlat, minlon, maxlon, sta, chan*

**QCSTATS**

The **qcstats** table contains waveform data quality statistics.

**TABLE 89: QCSTATS**

Column	Storage Type	Description
1 <i>qcstatsid</i>	number(8)	data quality statistics identifier
2 <i>sta</i>	varchar2(6)	station name
3 <i>chan</i>	varchar2(8)	channel name
4 <i>time</i>	float(53)	interval start time
5 <i>jdate</i>	number(8)	Julian date
6 <i>endtime</i>	float(53)	interval end time
7 <i>dettime</i>	float(53)	detection interval start time
8 <i>detendtime</i>	float(53)	detection interval end time
9 <i>missing</i>	float(53)	amount of missing data
10 <i>dropped</i>	number(8)	flag indicating if interval was dropped
11 <i>nseg</i>	number(8)	number of masked segments
12 <i>masked</i>	float(53)	amount of data in masked segments
13 <i>pointspike</i>	float(53)	amount of data in masked due to point-spikes
14 <i>spike</i>	float(53)	amount of data in masked due to spikes
15 <i>nconstseg</i>	number(8)	number of constant valued segments
16 <i>const</i>	float(53)	amount of data masked due to constant valued segments
17 <i>avgconstval</i>	float(53)	average value in constant segments
18 <i>stdconstval</i>	float(53)	standard deviation of constant values
19 <i>auth</i>	varchar2(15)	author
20 <i>lddate</i>	date	load date

**▼ S/H/I Table Descriptions**

Category: System Monitoring

Keys: Primary      *qcstatsid*

Data: Descriptive      *sta, chan*  
Measurement      *time, jdate, endtime, dettime, detendtime, missing,*  
                      *dropped, nseg, masked, pointspike, spike, nconstseg,*  
                      *const, avgconstval, stdconstval*  
Administrative      *auth, lddate*

**REBDONE\_DATADAY\_FLAG**

The `rebdone_dataday_flag` table contains the status of Reviewed Event Bulletin (REB) bulletin generation.

**TABLE 90: REBDONE\_DATADAY\_FLAG**

Column	Storage Type	Description
1 <i>dataday</i>	number(12)	Julian day
2 <i>state</i>	varchar2(12)	state of processing
3 <i>donetime</i>	float(53)	time that REB was produced
4 <i>lenddate</i>	date	load date

Category: Interactive Processing

Keys: Primary      *dataday*

Data:      Descriptive      *state*  
           Measurement      *dataday, donetime*  
           Administration      *lenddate*

▼ **S/H/I Table Descriptions**

## **REF\_LOC**

The **ref\_loc** table contains reference locations for comparing origins to known geographic locations. This table is used by the *ExAnComp* application.

**TABLE 91: REF\_LOC**

Column	Storage Type	Description
1 <i>refid</i>	number(8)	reference location identifier
2 <i>refname</i>	varchar2(16)	reference location name
3 <i>lat</i>	float(24)	latitude
4 <i>lon</i>	float(24)	longitude
5 <i>descrip</i>	varchar2(80)	description
6 <i>lddate</i>	date	load date

Category: System Monitoring

Keys: Primary      *refid*

Data: Descriptive      *refname, lat, lon, descrip*  
Administrative      *lddate*

**REGCOEF**

The **regcoef** table contains linear coefficients for regional processing.

**TABLE 92: REGCOEF**

Column	Storage Type	Description
1 <i>rcoefid</i>	varchar2(20)	linear coefficient set identifier
2 <i>rcoeftype</i>	varchar2(10)	linear coefficient value identifier
3 <i>rcoefvalue</i>	float(24)	linear coefficient value
4 <i>ondate</i>	number(8)	Julian start date
5 <i>offdate</i>	number(8)	Julian stop date
6 <i>lenddate</i>	date	load date

Category: Fundamental

Keys: Primary      *rcoefid/rcoeftype*

Data: Descriptive      *ondate, offdate, rcoefvalue*  
          Administrative      *lenddate*

## ▼ S/H/I Table Descriptions

**REMARK**

The **remark** table contains comments. This table may be used to store free-form comments that embellish records of other tables. The *commid* field in many tables refers to a record in the **remark** table. If *commid* is null (-1) in a record of any other table, no comments are stored for that record.

**TABLE 93: REMARK**

Column	Storage Type	Description
1 <i>commid</i>	number(8)	comment identifier
2 <i>lineno</i>	number(8)	comment line number
3 <i>remark</i>	varchar2(80)	free-format comment
4 <i>lenddate</i>	date	load date

Category: Database and Utility

Keys: Primary      *commid/lineno*

Data: Descriptive      *lineno, remark*  
Administrative      *lenddate*

## REQUEST

The **request** table defines segments of auxiliary waveform data to be acquired. The *start\_time*, *end\_time*, *sta* and *chan* fields define a single unit of data. Data import programs must succeed in acquiring all the data for a time interval before changing the state to indicate success.

**TABLE 94: REQUEST**

Column	Storage Type	Description
1 <i>reqid</i>	number(8)	request identifier
2 <i>sta</i>	varchar2(6)	station code
3 <i>chan</i>	varchar2(8)	channel code
4 <i>array</i>	varchar2(8)	array code
5 <i>orid</i>	number(8)	origin identifier
6 <i>evid</i>	number(8)	event identifier
7 <i>start_time</i>	float(53)	starting time of requested waveform data
8 <i>end_time</i>	float(53)	ending time of requested waveform data
9 <i>class</i>	varchar2(16)	type of request
10 <i>state</i>	varchar2(16)	current request status
11 <i>statecount</i>	number(8)	number of failed attempts (when state = failed)
12 <i>complete</i>	number(8)	percentage of data acquired
13 <i>requestor</i>	varchar2(15)	original author of record
14 <i>modtime</i>	float(53)	time of last state change (epoch time)
15 <i>modauthor</i>	varchar2(15)	author of last state change
16 <i>lddate</i>	date	load date

**▼ S/H/I Table Descriptions**

Category: Data Services

Keys: Primary      *reqid*  
Alternate      *sta/chan/start\_time/end\_time*  
Foreign      *orid, evid*

Data: Descriptive      *sta, chan, array, class requestor, modauthor*  
Measurement      *start\_time, end\_time, state, statecount, complete,*  
Administrative      *modtime*  
                        *lddate*

**REVAUDIT**

The **revaudit** table keeps a history of the revisions made to an event.

**TABLE 95: REVAUDIT**

<b>Column</b>	<b>Storage Type</b>	<b>Description</b>
1 <i>revid</i>	number(8)	revision identifier
2 <i>revfunction</i>	varchar2(32)	name of the revision function used
3 <i>auth</i>	varchar2(15)	author (originator) of the revision
4 <i>revtagid1</i>	number(8)	<i>revtagname1</i> value; the value of the foreign key identified in <i>revtagname1</i>
5 <i>revtagname1</i>	varchar2(8)	<i>revtagname1</i> type; the name of the foreign key whose value is <i>revtagid1</i>
6 <i>revtagid2</i>	number(8)	<i>revtagname2</i> value; the value of the foreign key identified in <i>revtagname2</i>
7 <i>revtagname2</i>	varchar2(8)	<i>revtagname2</i> type; the name of the foreign key whose value is <i>revtagid2</i>
8 <i>revstate</i>	varchar2(16)	state of the revision
9 <i>lddate</i>	date	load date

Category: Interactive processing

Keys: Primary *revid*  
Foreign *revtagid1*, *revtagid2*

Data: Descriptive *revfunction*, *auth*, *revtagname1*, *revtagname2*, *revstate*  
Administrative *lddate*

**▼ S/H/I Table Descriptions****SCAN\_DATE**

The **scan\_date** table is used to track which data days were scanned for events missed by the automatic system.

**TABLE 96: SCAN\_DATE**

Column	Storage Type	Description
1 <i>jdate</i>	number(8)	Julian date
2 <i>scan</i>	varchar2(1)	scanning status = y, n

Category: Interactive Processing

Keys: Primary *jdate*

Data: Descriptive *scan*  
Measurement *jdate*

## SEISGRID, DSEISGRID

The **seisgrid** table contains a natural seismicity grid, which includes the average number of events per year with magnitude greater than the threshold in this table for each latitude-longitude grid point (the grid points are defined in the **seisindex** table). The **seisgrid** table is used by the AEQ application to help identify anomalous events.

**TABLE 97: SEISGRID (DSEISGRID)**

Column	Storage Type	Description
1 <i>grdname</i>	varchar2(6)	grid name
2 <i>icell</i>	number(8)	grid cell index
3 <i>magth</i>	float(24)	magnitude threshold
4 <i>magtype</i>	varchar2(6)	magnitude type
5 <i>nevyr</i>	float(24)	average number of events/year
6 <i>lddate</i>	date	load date

Category: Automatic Processing

Keys: Primary *grdname/icell*

Data:	Descriptive	<i>grdname, icell, magth, magtype</i>
	Measurement	<i>nevyr</i>
	Administrative	<i>lddate</i>

▼ **S/H/I Table Descriptions**

## **SEISINDEX, DSEISINDEX**

The **seisindex** table contains the geographic grids of natural seismicity data in the **seisgrid** table. The **dseisindex** table contains the geographic grids of seismicity data in the **dseisgrid** table. The **seisindex** table is used by the AEQ application to help identify anomalous events.

**TABLE 98: SEISINDEX (DSEISINDEX)**

Column	Storage Type	Description
1 <i>grdname</i>	varchar2(6)	grid name
2 <i>lat1</i>	float(24)	initial latitude
3 <i>lon1</i>	float(24)	initial longitude
4 <i>dlat</i>	float(24)	latitude increment
5 <i>dlon</i>	float(24)	longitude increment
6 <i>nlat</i>	number(8)	number of latitudes
7 <i>nlon</i>	number(8)	number of longitudes
8 <i>orderby</i>	varchar2(6)	order by (either latitude or longitude)
9 <i>lddate</i>	date	load date

Category: Automatic Processing

Keys: Primary *grdname*

Data: Descriptive *grdname, lat1, lon1, dlat, dlon, nlat, nlon, orderby*  
Administrative *lddate*

## SENSOR

The **sensor** table contains calibration information for specific sensor channels. This table provides a record of updates in the calibration factor or clock error of each instrument and links a *sta(chan/time* to a complete instrument response in the table **instrument**. Waveform data are converted into physical units through multiplication by the *calib* field located in **wfdisc**. The correct value of *calib* may not be accurately known when the **wfdisc** record is entered into the database. The **sensor** table provides the mechanism (*calratio* and *calper*) to “update” *calib*, without requiring possibly hundreds of **wfdisc** records to be updated. Through the foreign key *inid*, this table is linked to **instrument**, which has fields pointing to flat files holding detailed calibration information in a variety of formats (see **instrument**).

**TABLE 99: SENSOR**

Column	Storage Type	Description
1 <i>sta</i>	varchar2(6)	station code
2 <i>chan</i>	varchar2(8)	channel code
3 <i>time</i>	float(53)	epoch time of start of recording period
4 <i>endtime</i>	float(53)	epoch time of end of recording period
5 <i>inid</i>	number(8)	instrument identifier
6 <i>chanid</i>	number(8)	channel identifier
7 <i>jdate</i>	number(8)	Julian date
8 <i>calratio</i>	float(24)	calibration
9 <i>calper</i>	float(24)	calibration period
10 <i>tshift</i>	float(24)	correction of data processing time
11 <i>instant</i>	varchar2(1)	(y, n) discrete/continuing snapshot
12 <i>lddate</i>	date	load date

**▼ S/H/I Table Descriptions**

Category: Core, Reference

Keys: Primary      *sta/chan/time/endtime  
inid, chanid*  
Foreign

Data: Descriptive      *sta, chan, instant  
time, endtime, jdate, calratio, calper, tshift*  
Measurement      *lddate*  
Administrative

**SITE**

The **site** table contains station location information. **Site** names and describes a point on the earth where measurements are made (for example, the location of an instrument or array of instruments). It contains information that normally changes infrequently, such as location. In addition, **site** contains fields that describe the offset of a station relative to an array reference location. Global data integrity implies that the *sta/ondate* in **site** be consistent with the *sta/chang/ondate* in **sitemchan**.

**TABLE 100: SITE**

<b>Column</b>	<b>Storage Type</b>	<b>Description</b>
1 <i>sta</i>	varchar2(6)	station identifier
2 <i>ondate</i>	number(8)	Julian start date
3 <i>offdate</i>	number(8)	Julian off date
4 <i>lat</i>	float(24)	latitude
5 <i>lon</i>	float(24)	longitude
6 <i>elev</i>	float(24)	elevation
7 <i>staname</i>	varchar2(50)	station description
8 <i>statype</i>	varchar2(4)	station type: single station, array
9 <i>refsta</i>	varchar2(6)	reference station for array members
10 <i>dnorth</i>	float(24)	offset from array reference (km)
11 <i>deast</i>	float(24)	offset from array reference (km)
12 <i>ldate</i>	date	load date

Category: Core, Reference

Keys: Primary      *sta/ondate*

Data: Descriptive      *sta, staname, statype, refsta*  
           Measurement      *ondate, offdate, lat, lon, elev, dnorth, deast*  
           Administrative      *ldate*

**▼ S/H/I Table Descriptions****SITE\_ADDRESS**

The **site\_address** table contains address information not included in the **site** table.

**TABLE 101: SITE\_ADDRESS**

Column	Storage Type	Description
1 <i>sta</i>	varchar2(6)	station name
2 <i>name</i>	varchar2(20)	expanded station name
3 <i>locality</i>	varchar2(40)	locality of station
4 <i>stat_prov</i>	varchar2(40)	state or province
5 <i>country</i>	varchar2(40)	country name
6 <i>Iddate</i>	date	load date

Category: Reference

Keys: Primary *sta*

Data: Descriptive *sta, name, locality, stat\_prov, country*  
Administrative *Iddate*

## SITEAUX

The **siteaux** table contains additional site-dependent parameters that are not included in the **site** table.

**TABLE 102: SITEAUX**

Column	Storage Type	Description
1 <i>sta</i>	varchar2(6)	station code
2 <i>chan</i>	varchar2(8)	channel code
3 <i>time</i>	float(53)	epoch time
4 <i>nois</i>	float(24)	noise amplitude
5 <i>noissd</i>	float(24)	standard deviation of log noise
6 <i>amcor</i>	float(24)	amplitude correction
7 <i>amcorsd</i>	float(24)	correction standard deviation
8 <i>snthrsh</i>	float(24)	signal/noise detection threshold
9 <i>rely</i>	float(24)	station reliability
10 <i>ptmcor</i>	float(24)	P arrival time correction
11 <i>stmcor</i>	float(24)	S arrival time correction
12 <i>staper</i>	float(24)	period for measurements
13 <i>auth</i>	varchar2(15)	author
14 <i>commid</i>	number(8)	comment identifier
15 <i>Iddate</i>	date	load date

Category: Reference

Keys: Primary *sta/chan/time*  
Foreign *commid*

Data: Descriptive *sta, chan*  
Measurement *time, nois, noissd, amcor, amcorsd, snthrsh, rely,*  
Administrative *ptmcor, stmcor, staper*  
*auth, Iddate*

▼ **S/H/I Table Descriptions**

## SITECHAN

The **sitechan** table contains station-channel information. This table describes the orientation of a recording channel at the site referenced by *sta*. It provides information about the various channels that are available at a station and maintains a record of the physical channel configuration at a site.

**TABLE 103: SITECHAN**

Column	Storage Type	Description
1 <i>sta</i>	varchar2(6)	station identifier
2 <i>chan</i>	varchar2(8)	channel identifier
3 <i>ondate</i>	number(8)	Julian start date
4 <i>chanid</i>	number(8)	channel identifier
5 <i>offdate</i>	number(8)	Julian off date
6 <i>ctype</i>	varchar2(4)	channel type
7 <i>edepth</i>	float(24)	emplacement depth
8 <i>hang</i>	float(24)	horizontal angle
9 <i>vang</i>	float(24)	vertical angle
10 <i>descrip</i>	varchar2(50)	channel description
11 <i>lddate</i>	date	load date

Category: Core, Reference

Keys: Primary *sta/chan/ondate*  
Alternate *chanid*

Data: Descriptive *sta, chan, ctype, descrip*  
Measurement *ondate, offdate, edepth, hang, vang*  
Administrative *lddate*

## SITEPOLL

The **sitepoll** table contains the station and channel names of auxiliary seismic stations that are polled periodically for system monitoring purposes.

**TABLE 104: SITEPOLL**

Column	Storage Type	Description
1 <i>sta</i>	varchar2(6)	station name
2 <i>net</i>	varchar2(6)	network name
3 <i>chan</i>	varchar2(6)	channel name
4 <i>lddate</i>	date	load date

Category: Data Services

Keys: Primary *sta/net/chan*

Data: Descriptive  
Administrative *sta, net, chan*  
*lddate*

▼ **S/H/I Table Descriptions**

## **SPLP**

The **splp** table contains event characterization parameters for short-period/long-period energy ratios. The ratios are computed using the *DFX* application.

**TABLE 105:SPLP**

Column	Storage Type	Description
1 <i>orid</i>	number(8)	origin identifier
2 <i>sta</i>	varchar2(6)	station name
3 <i>rectype</i>	varchar2(8)	recipe type
4 <i>ratio</i>	float(24)	ratio of short-period to long-period energy
5 <i>lenddate</i>	date	load date

Category: Fundamental

Keys: Primary      *orid/sta*

Data: Descriptive      *sta, rectype*  
           Measurement      *ratio*  
           Administrative      *lenddate*

**SPVAR**

The **spvar** table contains the variance of the detrended log spectrum between *fmin* and *fmax* for an arrival identified by *arid*. The frequency bandwidth is based on a signal-to-noise ratio criterion. Each phase associated with an event has a **spvar** record.

**TABLE 106: SPVAR**

Column	Storage Type	Description
1 <i>arid</i>	number(8)	arrival identifier
2 <i>fsid</i>	number(8)	Fourier spectrum identifier
3 <i>acoef</i>	float(24)	"a" coefficient for nonlinear trend
4 <i>bcoef</i>	float(24)	"b" coefficient for nonlinear trend
5 <i>ccoeff</i>	float(24)	"c" coefficient for nonlinear trend
6 <i>fmin</i>	float(24)	minimum frequency
7 <i>fmax</i>	float(24)	maximum frequency
8 <i>svar</i>	float(24)	variance of detrended log spectrum
9 <i>Iddate</i>	date	load date

Category: Fundamental

Keys: Primary *arid/fmin/fmax*  
Foreign *fsid*

Data: Measurement *acoef, bcoef, ccoef, fmin, fmax, svar*  
Administrative *Iddate*

**▼ S/H/I Table Descriptions****SREGION**

The **sregion** table contains seismic region numbers and their equivalent descriptions (see [Fli74]).

**TABLE 107:SREGION**

Column	Storage Type	Description
1 <i>srn</i>	number(8)	seismic region number
2 <i>srname</i>	varchar2(40)	seismic region name
3 <i>lenddate</i>	date	load date

Category: Core, Reference

Keys: Primary      *srn*

Data: Descriptive      *srn, srname*  
Administrative      *lenddate*

## STAMAG

The **stamag** table contains station magnitude estimates based upon measurements made on specific seismic phases. Values in **stamag** are used to calculate network magnitudes stored in **netmag**.

**TABLE 108: STAMAG**

Column	Storage Type	Description
1 <i>magid</i>	number(8)	magnitude identifier
2 <i>ampid</i>	number(8)	amplitude identifier
3 <i>sta</i>	varchar2(6)	station code
4 <i>arid</i>	number(8)	arrival identifier
5 <i>orid</i>	number(8)	origin identifier
6 <i>evid</i>	number(8)	event identifier
7 <i>phase</i>	varchar2(8)	associated phase
8 <i>delta</i>	float(24)	station-to-event distance
9 <i>magtype</i>	varchar2(6)	magnitude type (ml, ms, mb, and so on)
10 <i>magnitude</i>	float(24)	magnitude
11 <i>uncertainty</i>	float(24)	magnitude uncertainty
12 <i>magres</i>	float(24)	magnitude residual
13 <i>magdef</i>	varchar2(1)	"d" or "n" flag indicating if magnitude is defining or nondefining
14 <i>mmodel</i>	varchar2(15)	magnitude model
15 <i>auth</i>	varchar2(15)	author
16 <i>commid</i>	number(8)	comment identifier
17 <i>lenddate</i>	date	load date

**▼ S/H/I Table Descriptions**

Category: Core, Fundamental

Keys: Primary      *magid/ampid/sta  
arid, orid, evid, commid*  
Foreign

Data: Descriptive      *delta, sta, phase, magtype, magdef, mmodel  
magnitude, uncertainty, magres*  
Measurement      *auth, lddate*  
Administrative

## STASSOC

The **stassoc** table contains summary information about groups of related arrivals. This table defines the group of phases seen at a single station from the same event.

**TABLE 109: STASSOC**

Column	Storage Type	Description
1 <i>stassid</i>	number(8)	stassoc identifier
2 <i>sta</i>	varchar2(6)	station code
3 <i>etype</i>	varchar2(7)	event type
4 <i>location</i>	varchar2(32)	apparent location description
5 <i>dist</i>	float(24)	estimated distance
6 <i>azimuth</i>	float(24)	estimated azimuth
7 <i>lat</i>	float(24)	estimated latitude
8 <i>lon</i>	float(24)	estimated longitude
9 <i>depth</i>	float(24)	estimated depth
10 <i>time</i>	float(53)	estimated origin time
11 <i>imb</i>	float(24)	estimated $m_b$
12 <i>ims</i>	float(24)	initial estimated $M_s$
13 <i>iml</i>	float(24)	initial estimated $M_L$
14 <i>auth</i>	varchar2(15)	author
15 <i>commid</i>	number(8)	comment identifier
16 <i>ldate</i>	date	load date

Category: Core, Fundamental

Keys: Primary      *stassid*  
          Foreign      *commid*

Data: Descriptive      *sta, etype, location*  
       Measurement      *dist, azimuth, lat, lon, depth, time, imb, ims, iml*  
       Administrative      *auth, ldate*

**▼ S/H/I Table Descriptions****STD\_CHANMAP**

The **std\_chanmap** table contains standard channel name mappings between external and internal channel names.

**TABLE 110: STD\_CHANMAP**

Column	Storage Type	Description
1 <i>ext_chan</i>	varchar2(8)	external channel name
2 <i>int_chan</i>	varchar2(8)	internal channel name
3 <i>ondate</i>	number(8)	Julian start date
4 <i>offdate</i>	number(8)	Julian off date
5 <i>lenddate</i>	date	load date

Category: Data Services

Keys: Primary. *ext\_chan*  
Foreign. *int\_chan*

Data: Descriptive *ext\_chan, int\_chan*  
Measurement *ondate, offdate*  
Administrative *lenddate*

**SUBS**

The **subs** table is used by the *Subscription Subsystem*. It records what email address receives which products. In addition, it tracks the POC for the products.

**TABLE 111: SUBS**

Column	Storage Type	Description
1 <i>userid</i>	number(8)	user identifier
2 <i>intid</i>	number(8)	internal identifier
3 <i>intidtype</i>	varchar2(16)	type of <i>intid</i> (usually <i>msgid</i> )
4 <i>subsid</i>	number(8)	subscription identifier
5 <i>subsname</i>	varchar2(24)	subscription name
6 <i>prodid</i>	number(8)	product identifier
7 <i>address</i>	varchar2(64)	FTP or email address of destination
8 <i>deliv_meth</i>	varchar2(6)	delivery method ( <i>email</i> or <i>ftp</i> )
9 <i>status</i>	varchar2(6)	either "i," interactive; or "a," active
10 <i>ondate</i>	date	date subscription is "on"
11 <i>offdate</i>	date	date subscription is "off"
12 <i>initialdate</i>	date	initial date of subscription
13 <i>lenddate</i>	date	load date

Category: Data Services

Keys:	Primary Foreign	<i>userid/prodid</i> <i>userid, prodid</i>
Data:	Descriptive Measurement Administrative	<i>intidtype, subsname, deliv_meth, status</i> <i>intid, subsid, prodid, address, ondate, offdate</i> <i>lenddate</i>

▼ **S/H/I Table Descriptions**

## **SUBSUSER**

The **subsuser** table is used by the *Subscription Subsystem* to track authorized users of the system. A user is identified by the *username* and *domain* from the email header.

**TABLE 112: SUBSUSER**

Column	Storage Type	Description
1 <i>userid</i>	number(8)	user identifier
2 <i>username</i>	varchar2(24)	user name from the incoming subscription message
3 <i>domain</i>	varchar2(48)	domain name from the incoming subscription message
4 <i>status</i>	varchar2(24)	status of this user
5 <i>pocid</i>	number(8)	point of contact identifier
6 <i>priority</i>	number(2)	user priority
7 <i>lenddate</i>	date	load date

Category: Data Services

Keys: Primary      *userid*

Data: Descriptive      *username, domain, status, pocid, priority*  
Administrative      *lenddate*

## THIRDMOM

The **thirdmom** table contains the third moment of frequency and the percentage of signal frequency amplitudes greater than the corresponding noise frequency amplitudes for an arrival identified by *arid*. The measurements are used for event screening.

**TABLE 113: THIRDMOM**

Column	Storage Type	Description
1 <i>arid</i>	number(8)	arrival identifier
2 <i>sta</i>	varchar2(6)	station code
3 <i>rectype</i>	varchar2(8)	recipe identifier
4 <i>tmf</i>	float(24)	third moment of frequency
5 <i>tmfpct</i>	float(24)	percentage of signal spectrum amplitudes greater than noise spectrum amplitudes
6 <i>Iddate</i>	date	load date

Category: Fundamental

Keys: Primary *arid*

Data: Descriptive *sta, rectype*  
 Measurement *tmf, tmfpct*  
 Administrative *Iddate*

▼ **S/H/I Table Descriptions**

## **TIMEFREQ**

The **timefreq** table contains the time-frequency measurements for event characterization.

**TABLE 114: TIMEFREQ**

Column	Storage Type	Description
1 <i>orid</i>	number(8)	origin identifier
2 <i>sta</i>	varchar2(6)	station code
3 <i>rectype</i>	varchar2(8)	recipe identifier
4 <i>zavpct</i>	float(24)	ratio of bad points to total (vertical)
5 <i>navpct</i>	float(24)	ratio of bad points to total (north)
6 <i>eavpct</i>	float(24)	ratio of bad points to total (east)
7 <i>xavpct</i>	float(24)	ratio of bad points to total (cross-correlation)
8 <i>zavcep</i>	float(24)	average 2-D cepstrum max (vertical)
9 <i>navcep</i>	float(24)	average 2-D cepstrum max (north)
10 <i>eavcep</i>	float(24)	average 2-D cepstrum max (east)
11 <i>zavcor</i>	float(24)	average autocorrelation (vertical)
12 <i>navcor</i>	float(24)	average autocorrelation (north)
13 <i>eavcor</i>	float(24)	average autocorrelation (east)
14 <i>xcor</i>	float(24)	zero cross-correlation
15 <i>lenddate</i>	date	load date

Category: Fundamental

Keys: Primary      *orid/sta*

Data: Descriptive      *sta, rectype*  
 Measurement      *zavpct, navpct, eavpct, xavpct, zavcep, navcep,*  
                       *eavcep, zavcor, navcor, eavcor, xcor*  
 Administrative      *lenddate*

## TIMESTAMP

The **timestamp** table is used for scheduling automatic processing of time-series data.

**TABLE 115: TIMESTAMP**

Column	Storage Type	Description
1 <i>procclass</i>	varchar2(16)	process class
2 <i>procname</i>	varchar2(16)	process name
3 <i>time</i>	float(53)	last epoch time
4 <i>lenddate</i>	date	load date

Category: Distributed Processing

Keys: Primary *procclass/procname*

Data: Descriptive *procclass, procname, time*  
Administrative *lenddate*

▼ **S/H/I Table Descriptions**

## WEIGHTS

The **weights** table is used to store weighting information for calculating the weights of REB events.

**TABLE 116: WEIGHTS**

Column	Storage Type	Description
1 <i>phase</i>	varchar2(8)	phase type
2 <i>statype</i>	varchar2(4)	station type (ar or ss)
3 <i>net</i>	varchar2(8)	unique network identifier
4 <i>tweight</i>	float(24)	time weight
5 <i>aweight</i>	float(24)	azimuth weight
6 <i>sweight</i>	float(24)	slowness weight
7 <i>ondate</i>	number(8)	Julian start date
8 <i>offdate</i>	number(8)	Julian off date
9 <i>lenddate</i>	date	load date

Category: Data Services

Keys: Primary *phase/statype/net*

Data: Descriptive *tweight, aweight, sweight, ondate, offdate*  
Administrative *lenddate*

## WFAUX

The **wfaux** table contains the length of a waveform file in bytes. The table should have a one-to-one relationship with the **wfdisc** table for those *wfids* where a *length* is required. This table is required by the *Continuous Data Acquisition Subsystem* to determine the layout of a diskloop file and should also provide better access to **wfdisc** records and better means of determining where and how much data are stored. Routines writing, updating, or deleting from this table should do so simultaneously with **wfdisc**.

**TABLE 117: WFAUX**

Column	Storage Type	Description
1 <i>wfid</i>	number(8)	waveform identifier
2 <i>length</i>	number(10)	waveform length, bytes

Category: Fundamental

Keys: Primary      *wfid*

Data: Descriptive      *length*

▼ **S/H/I Table Descriptions**

## WFCONV

The **wfconv** table contains data translations that are to be performed on incoming data before they are written to disk by the *DLMAN* application. Data compression types include “–” if the data are not compressed, or “CA” for Canadian compression. “Type” in columns *intype* and *outtype* is the fixed-width data type (for example, “s4”) or “–” if not applicable (that is, if the data are compressed). A “samp” value of zero (0) indicates that the number of samples varies. “Samp” values less than zero in columns *insamp* and *outsamp* indicate that the total number of samples must be evenly divisible by –samp. *Strip* tells whether to strip the authentication headers from the data; “y” means strip them, “n” means do not.

**TABLE 118: WFCONV**

Column	Storage Type	Description
1 <i>sta</i>	varchar2(6)	station code
2 <i>chan</i>	varchar2(8)	channel code
3 <i>chanid</i>	number(8)	channel identifier
4 <i>inauth</i>	varchar2(1)	input authenticated (y or n)
5 <i>incomp</i>	varchar2(2)	input compression type
6 <i>intype</i>	varchar2(2)	input fixed-width data type
7 <i>insamp</i>	number(8)	input samples per packet
8 <i>outauth</i>	varchar2(1)	output authenticated (y or n)
9 <i>outcomp</i>	varchar2(2)	output compression type
10 <i>outtype</i>	varchar2(2)	output fixed-width data type
11 <i>outsamp</i>	number(8)	output samples per packet
12 <i>strip</i>	varchar2(1)	data stripped of headers
13 <i>commid</i>	number(8)	comment identifier
14 <i>lddate</i>	date	load date

Category: Data Services

Keys: Primary *sta/chan*  
Alternate *chanid*  
Foreign *commid*

Data: Descriptive *sta, chan, inauth, incomp, intype, insamp, outauth,*  
*outcomp, outtype, outsamp, strip*  
Administrative *ldate*

## **WFDISC, WFPROTO**

The **wfdisc** table contains a waveform header file and descriptive information. This table provides a pointer (or index) to waveforms stored on disk. The waveforms themselves are stored in ordinary disk files called **wfdisc** or ".w" files as a sequence of sample values (usually in binary representation). **WFproto** is a view of the **wfdisc** table that is used to create temporary **wfdisc** files for the *DLMan* application.

**TABLE 119: WFDISC (WFPROTO)**

<b>Column</b>	<b>Storage Type</b>	<b>Description</b>
1 <i>sta</i>	varchar2(6)	station code
2 <i>chan</i>	varchar2(8)	channel code
3 <i>time</i>	float(53)	epoch time of first sample in file
4 <i>wfid</i>	number(8)	waveform identifier
5 <i>chanid</i>	number(8)	channel operation identifier
6 <i>jdate</i>	number(8)	Julian date
7 <i>endtime</i>	float(53)	<i>time</i> + ( <i>nsamp</i> -1)/ <i>samprate</i>
8 <i>nsamp</i>	number(8)	number of samples
9 <i>samprate</i>	float(24)	sampling rate in samples/sec
10 <i>calib</i>	float(24)	nominal calibration
11 <i>calper</i>	float(24)	nominal calibration period
12 <i>instype</i>	varchar2(6)	instrument code
13 <i>segtype</i>	varchar2(1)	indexing method
14 <i>datatype</i>	varchar2(2)	numeric storage
15 <i>clip</i>	varchar2(1)	clipped flag
16 <i>dir</i>	varchar2(64)	directory
17 <i>dfile</i>	varchar2(32)	data file

**TABLE 119: WFDISC (WFPROTO) (CONTINUED)**

Column	Storage Type	Description
18 <i>foff</i>	number(10)	byte offset of data segment within file
19 <i>commid</i>	number(8)	comment identifier
20 <i>lddate</i>	date	load date

Category: Core, Fundamental

Keys:	Primary Alternate Foreign	<i>sta/chan/time</i> <i>wfid</i> <i>chanid, commid</i>
Data:	Descriptive Measurement Administrative	<i>sta, chan, dir, dfile, foff</i> <i>time, jdate, endtime, nsamp, samprate, calib, calper,</i> <i>instype, segtype, datatype, clip</i> <i>lddate</i>

**▼ S/H/I Table Descriptions****WFTAG**

The **wftag** table links various identifiers (for example, *orid*, *arid*, and *stassid* to *wfid*). Linkages can also be determined indirectly using *sta*, *chan*, and *time*. However, it is more efficient to use the **wftag** table.

**TABLE 120: WFTAG**

Column	Storage Type	Description
1 <i>tagname</i>	varchar2(8)	key ( <i>arid</i> , <i>orid</i> , <i>evid</i> , and so on)
2 <i>tagid</i>	number(8)	<i>tagname</i> value
3 <i>wfid</i>	number(8)	waveform identifier
4 <i>lddate</i>	date	load date

Category: Core, Fundamental

Keys: Primary      *tagname/tagid/wfid*

Data: Descriptive      *tagname*  
Administrative      *lddate*

## XTAG

The **xtag** table links various identifiers (for example, *orid*, *arid*, *stassid*, and *wfid* to other identifiers). This table is a generalization of the **wftag** table, which is limited to linking exclusively to the *wfid*. The *thisdb* column describes the database account for the record specified by *thisid* and *thisname*; *thatdb* describes the database account for the record specified by *thatid* and *thatname*. When a parent/child relationship exists between the records, *thisid* should designate the parent, and *thatid* should designate the child.

**TABLE 121: XTAG**

Column	Storage Type	Description
1 <i>thisid</i>	number(8)	<i>thisname</i> identifier
2 <i>thatid</i>	number(8)	<i>thatname</i> identifier
3 <i>thisname</i>	varchar2(8)	key for <i>thisid</i> ( <i>grid</i> , <i>orid</i> , <i>ntid</i> , and so on)
4 <i>thatname</i>	varchar2(8)	key for <i>thatid</i> ( <i>arid</i> , <i>orid</i> , <i>nfid</i> , and so on)
5 <i>thisdb</i>	varchar2(32)	database account for the records specified by <i>thisid</i> and <i>thisname</i>
6 <i>thatdb</i>	varchar2(32)	database account for the records specified by <i>thatid</i> and <i>thatname</i>
7 <i>lenddate</i>	date	load date

Category: Database and Utility

Keys: Primary      *thisid/thisname*

Data: Descriptive      *thisid*, *thatid*, *thisname*, *thatname*, *thisdb*, *thatdb*  
Administrative      *lenddate*



## References

The following sources supplement or are referenced in document:

- [And90a] Anderson, J., Farrell, W., Garcia, K., Given, J., and Swanger, H., *CSS Version 3 Database: Schema Reference Manual*, Science Applications International Corporation, 1990.
- [Car97] Carter, J., and Bowman, J. R., *IDC Database Schema*, CMR-97/28, 1997.
- [Fli74] Flinn, E. A., Engdhal, E. R., and Hill, A. R., "Seismic and Geographical Regionalization," *Bulletin of the Seismological Society of America*, Volume 64, No. 3, Part ii, pp. 771-992, 1974.
- [Gan79] Gane, C., and Sarson, T., *Structured Systems Analysis: Tools and Techniques*, Prentice-Hall, Inc., Englewood Cliffs, NJ, 1979.
- [IDC5.1.1] Science Applications International Corporation, Pacific-Sierra Research, Inc., *Database Schema (Part 1 and Part 2)*, SAIC-98/3009, PSR-98/TN1127, 1998.
- [IDC5.1.1Rev1] Science Applications International Corporation, Pacific-Sierra Research Corporation, *Database Schema (Parts 1, 2, and 3)*, Revision 1, SAIC-99/3009, PSR-99/TN1142, 1999.
- [IDC5.1.1Rev2] Science Applications International Corporation, Veridian Pacific-Sierra Research, *Database Schema, (Part 1, Part 2, and Part 3)*, Revision 2, SAIC-00/3057, PSR-00/TN2830, 2000.

## ▼ References

- [IDC5.1.2] Science Applications International Corporation, Pacific-Sierra Research Corporation, *Database Tutorial*, SAIC-99/3022, PSR-99/TN1145, 1999.
- [IDC5.1.3Rev0.1] Science Applications International Corporation, Veridian Pacific-Sierra Research, *Configuration of PIDC Databases, Revision 0.1*, SAIC-01/3022, PSR-99/TN1114, 2001.
- [IDC7.1.1] Science Applications International Corporation, *Detection and Feature Extraction (DFX)-Scheme Files*, SAIC-01/3000, 2001.
- [IDC7.1.3] Science Applications International Corporation, *Surface Wave Identification and Measurement*, SAIC-01/3008, 2001.
- [IDC7.1.4] Science Applications International Corporation, *Global Association (GA) Subsystem*, SAIC-01/3009, 2001.
- [IDC7.1.5] Science Applications International Corporation, *Event Location Software*, SAIC-01/3010, 2001.
- [IDC7.1.6] Science Applications International Corporation, *Event Magnitude Software*, SAIC-01/3011, 2001.
- [IDC7.1.10Rev1] Veridian Pacific-Sierra Research, *Radionuclide Software Design, Revision 1*, PSR-00/TN2834, 2000.
- [IDC7.1.11] Science Applications International Corporation, *WaveExpert*, SAIC-00/3029, 2000.
- [IDC7.1.12] Science Applications International Corporation, *Station Processing (StaPro)*, SAIC-00/3013, 2000.
- [IDC7.3.1] Science Applications International Corporation, *Distributed Application Control System (DACS)*, SAIC-01/3001, 2001.
- [IDC7.4.1] Science Applications International Corporation, *Continuous Data Subsystem CD-1.1*, SAIC-01/3012, 2001.
- [IDC7.4.2] Science Applications International Corporation, Pacific-Sierra Research Corporation, *Message Subsystem*, SAIC-98/3003, 1998.

- [IDC7.4.3] Science Applications International Corporation, *Retrieve Subsystem*, SAIC-01/3024, 2001.
- [IDC7.4.4] Science Applications International Corporation, *Subscription Subsystem*, SAIC-98/3001, 1998.
- [IDC7.5.1] Science Applications International Corporation, *Archiving Subsystem*, SAIC-01/3013, 2001.
- [Swa91] Swanger, H., Given, J., and Anderson, J., *IMS Extensions to the Center Version 3 Database*, Science Applications International Corporation, SAIC-91/1138, 1991.
- [Swa93] Swanger, H., Anderson, J., Sereno, T., Given, J., and Williams, D., *Extensions to the Center Version 3 Database, Revision 1*, Science Applications International Corporation, SAIC-93/1123, 1993.



# Glossary

Selected definitions in this glossary include prefixes of either "R: " or "S/H/I: ." Definitions applicable only to the radionuclide technology include the "R: " prefix; definitions applicable only to seismic, hydroacoustic, or infrasonic technologies include the "S/H/I: " prefix.

## Symbols

### 2-D

Two-dimensional.

### 3-C

Three-component.

### $\beta$

R: Beta particle.

### $\gamma$

R: Gamma particle.

### $\mu\text{Bq}$

R: MicroBecquerels.

### $\mu\text{Pa}$

MicroPascals.

## A

### abundance

R: Fraction of a decay event that results in the radiation(s) or interest (for example, a gamma line at a specific energy or a beta-gamma coincidence pair). Intensity is sometimes used to mean abundance.

### activation products

R: Nuclides produced from the absorption of a neutron by a nucleus.

### activity

R: Decay rate of a radionuclide; usually expressed in Becquerels (disintegrations per second), Bq.

### amp

Amplitude.

### amplitude

S/H/I: Zero-to-peak height of a waveform in nanometers.

### array

S/H/I: Collection of sensors distributed over a finite area (usually in a cross or concentric pattern) and referred to as a single station.

### arrival

S/H/I: Signal that has been associated to an event. First, the Global Association (GA) software associates the signal to an

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event. Later during interactive processing, many arrivals are confirmed and improved by visual inspection.

**ASCII**

American Standard Code for Information Interchange. Standard, unformatted 256-character set of letters and numbers.

**attribute**

(1) A database column. S/H/I; (2) Characteristic of an item; specifically, a quantitative measure of a S/H/I arrival such as azimuth, slowness, period, and amplitude.

**authentication signature**

Series of bytes that are unique to a set of data and that are used to verify the authenticity of the data.

**B****background**

R: Contribution to a spectrum from naturally occurring radionuclides as well as interactions between radiation and materials in the vicinity of the detector.

**baseline**

R: Contribution to a spectrum from the partial energy deposition of a gamma-ray in a detector.

**beta-gamma coincidence event**

R: Nuclear decay that produces both a gamma ray and a beta particle within a very short time scale. May also refer to

other photon-electron coincidence events such as an X-ray with a conversion electron.

**beta particle**

R: Electron that is produced from a nuclear decay. May also refer to other electron radiations, for example, a conversion electron.

**blank subtraction**

R: Process of removing counts from a sample spectrum or a region of interest within a sample spectrum originating from the air filter.

**BLANKPHD**

R: Blank Pulse Height Data; ASCII data message containing the pulse height data of an unexposed air filter, as well as other information, in an IDC-approved format.

**C****CALIBPHD**

R: Calibration Pulse Height Data; ASCII data message containing the pulse height data of a certified standard source, as well as other information, in an IDC-approved format. The data in a CALIBPHD are used to determine the ECR, EER, and RER.

**calibration coefficients**

R: Numbers that define the energy, resolution, and efficiency equations.

**centroid**

R: Energy (in keV) or channel number at the center of a fitted peak.

**channel**

R: Energy window (in keV) representing a differential increment of pulse height.  
S/H/I: Component of motion or distinct stream of data.

**cm**

Centimeter.

**coherent**

S/H/I: Quality of having a fixed phase relationship; as signals from a waveform detected on numerous seismic or infrasonic array station elements.

**concentration**

R: Activity per unit volume of air.

**cosmogenic nuclides**

R: Nuclides produced by the interaction of cosmic-rays with matter.

**counts**

R: Number of pulses observed within a spectrum channel.  
S/H/I: Units of digital waveform data.

**critical level/limit**

R: Minimum net counts that must be contained in an ROI for nuclide identification ( $L_c$ ).

**CSCI**

Computer Software Configuration Item.

**CTBT**

Comprehensive Nuclear Test-Ban Treaty (the Treaty).

**D****DB**

Database.

**dB**

Decibel.

**defining**

S/H/I: Arrival attribute, such as arrival time, azimuth, or slowness, which is used in calculating the event's location or magnitude.

**defining phase**

S/H/I: Associated phase for which features are used in the estimation of the location and origin time of an S/H/I event.

**DETBKPHD**

R: Detector Background Pulse Height Data; ASCII data message containing the pulse height data from a background count, as well as other information, in an IDC-approved format.

**detection limit**

R: The smallest amount of activity that can be reliably detected and quantified in a spectrum. This quantity is used to determine the MDC.

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### E

#### **ECR**

R: Energy versus Channel Regression; an equation providing the initial detector-specific relationship between channel number and energy. The equation contains calibration coefficients and is estimated from a transmitted calibration dataset.

#### **ECRU**

R: Energy versus Channel Regression Update; an equation providing the final detector-specific relationship between channel number and energy.

#### **EER**

R: Efficiency versus Energy Regression; an equation providing the detector-specific relationship between efficiency and energy.

#### **energy**

R: Usually refers to the measured kinetic energy of radiation quanta deposited in a detector. The unit most appropriate for such measurements is keV.  
S/H/I: Occurrence that displays characteristics indicative of a possible nuclear weapons test.

#### **epoch time**

Number of seconds after January 1, 1970 00:00:00.0.

### event

R: Occurrence that displays characteristics indicative of a possible nuclear weapons test.  
S/H/I: Unique source of seismic, hydroacoustic, or infrasonic wave energy that is limited in both time and space.

### **EWMA**

R: Exponentially Weighted Moving Average; statistical filter that recursively generates a prediction interval using past observations weighted in an exponential fashion. This filter is useful for determining anomalous radionuclide concentrations for categorization purposes.

### F

#### **FFT**

Fast Fourier Transform.

#### **fission (P)**

R: Particulates created in a fission event.

#### **fission (G)**

R: Gases created in a fission event.

#### **f-k**

S/H/I: Frequency versus wavenumber (k) analysis that maps phase power from an array as a function of azimuth and slowness.

#### **FPID**

R: Fission Product Identification.

**FTP**

File Transfer Protocol; protocol for transferring files between computers.

**FULL SPHD**

R: Full Sample Pulse Height Data; ASCII data message containing the pulse height data of a sample acquired for a complete collection interval, as well as other information, in an IDC-approved format.

**FWHM**

R: Full Width at Half-Maximum; metric of detector resolution and equivalent to the width of a photopeak (in keV) taken at the peak height equal to half the maximum peak counts.

**G****g**

Gram.

**GA**

S/H/I: Global Association application.  
GA associates S/H/I phases to events.

**gamma**

R: Gamma-ray.

**gamma ray**

R: Photon that is produced from a nuclear transition; may also imply other photon radiations, for example, an X-ray.

**GARDS**

R: Global Atmospheric Radionuclide Detection System; the network of radionuclide monitoring stations that meet CTBT requirements and transmit radionuclide data to the IDC with coordination by the IDC.

**GASBKPHD**

R: Gas Background Pulse Height Data. Data type sent by noble gas monitoring systems that observe a memory effect during sample acquisition due to atoms from the previous sample adsorbed onto the walls of the gas cell. The counts from the memory effect must be subtracted from the sample counts for accurate activity quantification.

**GMT**

Greenwich Mean Time.

**GSETT-3**

S/H/I: Group of Scientific Experts Third Technical Test.

**H****hydroacoustic**

S/H/I: Pertaining to sound in the ocean.

**I****IDC**

International Data Centre.

**IEEE**

Institute for Electrical and Electronic Engineers.

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**IIR**

Infinite Impulse Response (filters also referred to as recursive filters).

**IMS**

International Monitoring System.

**infrasonic**

S/H/I: Pertaining to low-frequency (sub-audible) sound in the atmosphere.

**Internet**

World-wide network of computers linked by means of the IP protocol.

**IP**

Internet protocol.

**K****KB**

Kilobyte. 1,024 bytes.

**keV**

R: Kiloelectron Volts; a metric of kinetic energy.

**keyline**

R: Photon with the highest detection probability.

**L** **$L_c$** 

R: Critical level.

**local**

S/H/I: (1) (distance) Source to seismometer separations of a few degrees or less. (2) (event) Recorded at distances where the first P and S waves from shallow events have traveled along direct paths within the crust.

**M****m**

(1) Meter(s). (2) Megabyte(s); 1,024 kilobytes. (3) Month(s). (4) Minute(s).

 **$m_b$** 

S/H/I: Magnitude of a seismic body wave.

**mbar**

Millibar.

**mbmle**

S/H/I: Magnitude of an event based on maximum likelihood estimation using seismic body waves.

 **$mBq$** 

R: MilliBecquerel.

**MDA**

R: Minimum Detectable Activity.

**MDC**

R: Minimum Detectable Concentration.

**minimum detectable concentration**

R: Activity concentration of a given radionuclide that is indistinguishable from the measurement process noise level.

**M<sub>L</sub>**

S/H/I: Magnitude based on waves measured near the source.

**mm**

Millimeter.

**monitoring system**

See IMS and RMS.

**M<sub>s</sub>**

S/H/I: Magnitude of seismic surface waves.

**msmle**

S/H/I: Magnitude of an event based on maximum likelihood estimation using surface waves.

**multiplet**

R: Spectral region of interest comprised of more than one photopeak.

**N****NA**

Not Applicable.

**NDC**

National Data Center.

**NID**

Nuclide Identification.

**nm**

Nanometer.

**nondefining**

S/H/I: Arrival attribute, such as arrival time, azimuth, or slowness, which is associated, but not used in calculating the event's location or magnitude.

**nondefining phase**

S/H/I: Associated phase for which features are not used in the estimating the location and origin time of an S/H/I event.

**NSE**

Noise Spectrum Equalization.

**nuclide**

R: One of many combinations of nucleons that may comprise an atomic nucleus. Because all nuclides of interest with respect to CTBT compliance verification are radioactive, this term is often used to refer specifically to radionuclides.

**O****Operations Manuals**

Treaty-specified, formal documents that describe how to provide data, receive IDC products, access the IDC database, and evaluate the performance of the IDC.

**ORACLE**

Vendor of PIDC and IDC database management system.

**origin**

S/H/I: Hypothesized time and location of a seismic, hydroacoustic, or infrasonic event. Any event may have many ori-

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gins. Characteristics such as magnitudes and error estimates may be associated with an origin.

## P

### **parameter (par) file**

ASCII file containing values for parameters of a program. Par files are used to replace command line arguments. The files are formatted as a list of [*token* = *value*] strings.

### **peak**

R: Statistically significant increase in counts above a spectrum baseline at an energy associated with a gamma line of a particular radionuclide or other phenomenon.

### **PHD**

R: Pulse Height Data; a format for spectral data messages. Possible PHD data message types include BLANKPHD, CALIBPHD, DETBKPHD, GASBKPHD, QCPHD, and SAMPLEPHD.

### **PIDC**

Prototype International Data Centre.

### **polarization**

S/H/I: Form of three-component analysis used to derive azimuth and slowness information from non-array stations.

### **PREL SPHD**

R: Preliminary Sample Pulse Height Data; ASCII data message containing the pulse height data of a sample acquired for less than a complete collection interval, as well as other information.

### **primary seismic**

S/H/I: IMS seismic station(s) or data that is (are) part of the detection network.

### **PS**

R: Peak Search.

## Q

### **QC**

Quality Control.

### **QCPHD**

R: Quality Control Pulse Height Data; ASCII data message containing the pulse height data of a certified source as well as other information. Information in the QCPHD, along with other data, is used to check a detector's state of health.

### **quefrency**

S/H/I: Time-delay axis with units of seconds for a cepstrum.

## R

### **R**

R: Radionuclide.

### **radioactivity**

R: See activity.

**radionuclide**

R: Nuclide that has an unstable nucleus, that is, a radioactive nuclide.

**REB**

S/H/I: Reviewed Event Bulletin; the bulletin formed of all S/H/I events that have passed analyst inspection and quality assurance review.

**region of interest**

R: Region of a radionuclide spectrum or histogram that corresponds to a particular radionuclide.

**regional**

S/H/I: (1) (distance) Source to seismometer separations between a few degrees and 20 degrees. (2) (event) Recorded at distances where the first P and S waves from shallow events have traveled along paths through the uppermost mantle.

**RER**

R: Resolution (versus) Energy Regression; an equation providing the initial detector-specific relationship between resolution and energy. This equation contains calibration coefficients and is interpolated from a transmitted calibration spectrum.

**residual**

S/H/I: Difference in time, azimuth, or slowness between a calculated attribute and its corresponding theoretical value.

**RLR**

R: Radionuclide Lab Report; report containing sample analysis results from a certified radionuclide laboratory.

**RMS**

R: Radionuclide Monitoring System; the part of the IMS that monitors the atmosphere for radionuclides.

**RNPS**

R: Radionuclide Network Product Summary; daily report containing a summary of the Radionuclide Network for a three-day period, including the data received, their products, and any relevant nuclides.

**ROI**

R: Region of interest.

**RRR**

R: Reviewed Radionuclide Report. Electronic file containing the final results of the interactive review of the automated radionuclide processing. It contains sections on sample information, measurement categorization, measured radionuclide quantities, MDCs, radionuclide identification, analyst editing, processing parameters, data quality flags, event screening flags, calibration equations, and field of regard.

**S****SAIC**

Science Applications International Corporation.

**sample**

Any physical entity counted on a detector.

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**SAMPLEPHD**

R: Sample Pulse Height Data; ASCII data message containing pulse height data acquired by counting a gas or particulate sample with a detector system.

**S/H/I**

S/H/I: Seismic, hydroacoustic, and infrasonic.

**SID**

R: Sample ID; unique alphanumeric string assigned to a sample during the automated processing for identification and accounting purposes.

**singlet**

R: Spectrum photopeak consisting of counts from one mono-energetic gamma-ray; photopeak containing counts from multiple photons, but fit as if it is comprised of counts from only one because contributions from the individual radiations cannot be separated, as in a multiplet.

**S LSD**

S/H/I: Standard List of Signal Detections.

**SOH**

State of Health; indicator of a system's operability.

**spectrum**

R: Plot of the differential number of pulses (in counts) per differential pulse height (in channels or keV).

S/H/I: Plot of the energy contained in waveforms as a function of frequency.

**SPHD**

R: Sample Pulse Height Data; ASCII data message type containing the pulse height data of a sample, as well as other information. The two types of SPHDs are full and preliminary. See FULL SPHD and PREL SPHD.

**SQL**

Structured Query Language; a language for manipulating data in a relational database.

**SSREB**

R: Standard Screened Radionuclide Event Bulletin; bulletin generated by the IDC when fission or activation products are detected at a radionuclide station above normal limits. A SSREB contains information on the possible event, source location, fission products, activation products detected, any isotopic ratios calculated, and any certified laboratory results. New event information can be added to the SSREB as it arrives, therefore, multiple revisions of an SSREB are possible.

**STA/LTA**

S/H/I: Short-term average/long-term average ratio.

**Sum/Natural**

R: Artificial entries in the nuclide library that enable the automated processing to identify commonly observed sum peaks in a spectrum.

## T

**taxonomy**

Systematic arrangement; classification.

**TCP/IP**

Transmission Control Protocol/Internet Protocol.

**teleseismic**

S/H/I: (1) (distance) Source to seismometer separations of 20 degrees or more. (2) (event) Recorded at distances where the first P and S waves from shallow events have traveled paths through the mantle/core.

**time series**

S/H/I: Time ordered sequence of data samples. Typically a waveform or derived from waveforms, such as a beam.

**Treaty**

Comprehensive Nuclear Test-Ban Treaty (CTBT).

**Type I Error**

R: Spectral region of interest falsely identified as a peak by the automated processing.

**Type II Error**

R: Peak undetected by the automated processing.



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